Wetland Mitigation Monitoring for FAP 331 (IL 13) - 2003

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Introduction

Road construction for FAP 331 (IL 13) resulted in impacts requiring 9.15 acres of wetland mitigation. A compensation plan was prepared which called for floodplain forest, emergent, and scrub shrub (changed to cypress gum swamp) wetland creation, located in a 20 acre abandoned agricultural field in western Saline Co. Reexamination of the original report (Morris et al., 1994) shows that the field contained approximately 2.02 acres of wetland prior to alteration of the site. Approximately 2.5 acres (the area originally planned for emergent and cypress-gum wetlands) were excavated to a depth of 6 to 12 in. A shallow berm, including water control structure, was established at the southeastern corner of the site in order to retard sheetflow and hold more surface water on-site. The wetland creation site was completed in 1997. Vegetation planting was carried out in 1997 and 1998.

In 2003, field monitoring was conducted on 10 September. This report details results of the 2003 monitoring. Project goals, objectives and performance criteria are included, as are monitoring methods, monitoring results, summary information and recommendations. A wetland mitigation site assessment (Morris et al., 1994) and hydrogeologic characterization report (Rorick and Hilchen, 1995) were prepered by the Illinois Natural History Survey and Illinois State Geological Survey. A wetland mitigation plan was prepared by Smith (1995). In September 2001, a close out meeting was held on site in which the U. S. Army Corps of Engineers indicated that, if certain conditions were met, they were prepared to accept the site as mitigation for wetland impacts resulting from IL 13 construction.

Project Goals, Objectives and Performance Criteria

Proposed goals and objectives are based on information contained in the original IDOT project request (Brooks, 1999) and the project Special Provisions (IDOT, no date). Performance criteria are based on those specified in the U. S. C. O. E. Wetland Delineation Manual (Environmental Laboratory, 1987), and Guidelines for Developing Mitigation Proposals (USACOE, 1993). Each goal should be attained by the end of the five year monitoring period. Project goals, objectives and performance criteria are listed below.

Created Wetland Site

Project goal 1: The created wetland site should be determined to be jurisdictional by current federal standards.

Objective: The created wetland should compensate for losses of 4.7 acres of forested wetland, emergent wetland, and shrub scrub wetland. A total of 9.15 acres of wetland compensation is required.

Performance Criteria: The entire created wetland should satisfy the three criteria of the federal wetland definition: hydrophytic vegetation, hydric soils and wetland hydrology.

A. Predominance of hydrophytic vegetation - More than 50% of the dominant plant species must be hydrophytic.

B. Presence of hydric soils - Hydric soil characteristics must be present, or conditions favorable to the formation of hydric soil must persist at the site.

C. Presence of wetland hydrology - the created wetland must be inundated at an average depth of less than 2 m (6.6 ft) or have soils saturated to the surface for at least 12.5 % of the growing season.

Project goal 2: The created wetland should meet minimum standards as to floristic composition.

Objective: The created wetland should compensate in-kind for loss of forested, scrub shrub, and emergent wetlands. The wetland compensation should be composed of vegetation characteristic of forested, scrub shrub, and emergent wetlands.

Performance Criteria: Planted herbaceous and woody species should have good survivorship and health over the five year monitoring period. At least 50% of the plant species present should be non-weedy, native, perennial species. None of the three most dominant species in any stratum should be nonnative, or weedy species.

Methods

Monitoring will be performed on the created wetland site. Illinois Natural History Survey personnel monitored the site from 1999 through 2003 (five years) and will continue until the Illinois Department of Transportation requests that monitoring cease. The Illinois State Geological Survey has been tasked to monitor hydrology. Monitoring reports on the status of the wetland creation site will be submitted annually. The likelihood of meeting the proposed goals and performance criteria will be addressed. If evidence is discovered, indicating that the goals/performance critieria will not be met by the end of the five year monitoring period, written management recommendations will be submitted to IDOT in an effort to correct the problems.

Project Goal 1

Created wetland areas will be measured in the field, plotted on aerial photographs, and acreages determined with digital planimeter.

A. Hydrophytic Vegetation - Within the 2.5 acre excavated area, where planting was carried out, species composition (relative frequency, relative dominance, and Importance Value) will be determined annually through quantitative vegetation sampling of permanent plots. Five parallel transects were established at 15.2 m (50 ft) intervals. Sampling points were established at 15.2 m (50 ft) intervals on each transect. At each sampling point, vegetation was tallied by species and percent cover in 24, 1 m^2 quadrats. Beginning in 2000, with planted trees and shrubs tall enough to be seen in the dense herbaceous vegetation, woody

species composition within the excavated area will be determined through quantitative sampling of permanent plots. Four transects were established at 30.5 m (100 ft) intervals. Sampling points were established at 30.5 m (100 ft) intervals on each transect. At each sampling point, number of shrub layer individuals by species were recorded in 9, 100 m^2 plots. For the remainder of the site, using visual estimation, the dominant species of vegetation in each stratum are determined. Dominance is based on Importance Value, a numerical average of species' relative frequency, density and aerial coverage (or basal area) (Cox 1985). In each stratum dominant species include, starting with the most dominant, those species whose Importance Values, when summed in descending order, immediately exceed 50%, as well as any additional species whose Importance Values are 20% or greater (Federal Interagency Committee for Wetland Delineation, 1989). Dominant species are assigned wetland indicator status ratings (Reed, 1988). Any plant rated facultative or wetter (FAC, FAC+, FACW-, FACW, FACW+ or OBL) is considered hydrophytic. Hydrophytic vegetation is determined to be present if greater than 50% of the dominant species are hydrophytic (Environmental Laboratory 1987).

B. Hydric Soils - Soil cores collected from the mitigation site are examined for the presence of redoximorphic features (Environmental Laboratory 1987). This site includes 2.5 acres of shallow (≤ 1 ft) excavation, and a shallow berm erected in the vicinity of the southeast corner of the site. The excavated area and the area near the berm are expected to display changing soil characteristics as those portions of the site adjust to new hydrologic conditions. The western portion of the site is not expected to experience soil conditions that change over time.

C. Wetland Hydrology - The Illinois State Geological Survey has been tasked to monitor this site. Six stage gauges have been installed, and the number of monitoring wells has been increased from 25 to 32 (Ketterling et al., 2001). Information provided by ISGS concerning hydrology of the site is incorporated into this report. In addition, visual inspection of the site for field indicators of wetland hydrology, such as landscape position, inundation or surface saturation or wetland drainage and debris patterns, will be used to determine the presence of wetland hydrology (Environmental Laboratory 1987).

Project Goal 2

A. Survival of planted species – At this site, complications prohibit the determination of percent survival of planted species. For both woody and herbaceous species, there have been substitutions and omissions of species listed in the planting plan and the number of individuals per species has been altered and is not known. In addition, the woody species have been planted in different areas than what is specified in the mitigation plan and apparently have been placed randomly, with no stakes to mark planting locations. The planting boxes for herbaceous species had been removed before the first year's monitoring fieldwork began, and species have begun to spread beyond their planting cells. Beginning in 2000, quantitative sampling has been used to estimate numbers of live, planted woody species. In 1999, while the outlines of the recently removed planting boxes (pods) were still apparent, aerial extent, percent cover and a qualitative success rating were determined for each cell of herbaceous planting. In subsequent years, as the various species spread or decline, it will be increasingly difficult to assess each planted herbaceous species in relation to its original planting cell. Therefore, for each of the nine original planted species, aerial extent, percent cover and a qualitative success (population health) rating will be determined and related to values given in the 1999 sampling season.

B. Vegetation - Dominant plant species in each stratum in the emergent wetland and wet meadow (oak-hickory wetland) will be determined annually by quantitative sampling.

Dominant plant species for the other created wetland communities within the site will be determined by visual estimation. Lists of dominant species will be examined in an attempt to ensure that, in the created wetlands, none of the three most dominant species are weedy or non-native. A species list will be prepared annually for each community in order to ensure that at least 50% of the plant species are non-weedy, native and perennial. A Floristic Quality Index will be computed annually for each plant community.

Faunal Surveys

In addition to stated performance criteria, INHS personnel will conduct annual surveys of herpetofauna and avifauna.

Herpetofauna

The compensation site was visited by INHS personnel on 25 March, 8 May, 22 and 23 July, 27 August, 17 September and 10 October 2003. The main objective was to conduct visual encounter surveys, and limited dipnetting, throughout the site and compile a species list. Because visual encounter surveys may miss snake species, seven snake boards were placed throughout the site in March 2002. Call surveys were performed on a limited basis. Emphasis was placed on amphibian species and evidence of breeding and recruitment of these species. Fishless, ephemeral wetlands are among the rarest habitat types in Illinois and it is these wetlands that many native amphibian species utilize for reproduction. We surveyed the entire property, but special attention was directed to the emergent wetland, a ditch/pool at the east edge of the property, a forested pond in the eastern portion of the site, and the forested area at the southern boundary. A list has been compiled of all the amphibians and reptiles encountered at the wetland compensation site to date.

Avifauna

We established four census points 150 m apart and at least 50 m from the edge of the property. Because of the complexity of the habitat, all points encompass several habitat types. We used standard avian point counts (Manley et al., 1993) to subsample the avifauna, recording all individuals heard or seen within a range of 50 m during ten minute count periods. These timed counts provide measures of the structure of bird communities (number of individuals and number of species) in the area. Counts were conducted on 23 May and 19 June 2003.

Results

Project Goal 1: The created wetland site should be determined to be jurisdictional by current federal standards.

Additional soil investigations and careful remapping of wetland acreage in 2001, 2002 and 2003, is in close agreement with our 2000 estimate of wetland acreage. This site originally supported 0.82 ha (2.02 acres) of wetland. Shallow excavation and berm construction have resulted in creation of 4.66 ha (11.50 acres) of additional wetland (about 6.5 acres of nonwetland remain). All wetland areas are underlain by Bonnie silt loam, poorly drained, which is a hydric soil (Appendix 1). Within the excavated area, a 0.49 ha (1.2 acre) emergent wetland now exists, surrounded by a 0.77 ha (1.9 acre) wet meadow (oak–hickory wetland). The emergent wetland is dominated by *Phyla lanceolata* (OBL), *Ludwigia palustris* (OBL), *Juncus acuminatus* (OBL), *Polygonum hydropiperoides* (OBL), *Panicum*

rigidulum (FACW) and *Cyperus pseudovegatus* (FACW). The wet meadow is dominated, in the shrub layer, by *Fraxinus pennsylvanica* (FACW) and *Acer rubrum* (FAC), and by *Juncus interior* (FAC+), *Pycnanthemum tenuifolium* (FAC), *Polygonum hydropiperoides* (OBL), *Panicum acuminatum* (FAC), *Ulmus americana* (FACW-), and *Lespedeza cuneata* (NI) in the herb layer. The hydrophytic vegetation criterion is thereby satisfied for both of these sites. The construction of a shallow berm at the southeast border of the site has impeded surface flow and resulted in the creation of approximately 2.19 ha (5.4 acres) of shrub scrub wetland (young forest) in the eastern portion of the site. This community is dominated by *Acer rubrum* (FAC), and *Fraxinus pennsylvanica* (FACW) in the sapling layer, thereby satisfying the hydrophytic vegetation criterion (Appendix 1).

In all created wetland areas, field indicators of wetland hydrology were observed. These included wetland drainage patterns, driftlines, water stained leaves and low, level topography. In addition, the Illinois State Geological Survey (ISGS) established four monitoring wells and three stage gauges within the created wetland sites. Based on well and stage gauge data, these sites meet the wetland hydrology criterion (saturation or inundation for at least 12.5% of the growing season) (fig. 1).

In 2001, the ISGS added wells and, in every year since, has revised their estimate of acreage supporting wetland hydrology. Currently the ISGS estimates 16.6 acres (6.7 ha) of created wetlands onsite (fig. 1), ISGS estimates of created wetland area have ranged from 7.9 acres in 2000 to 18 acres in 2002 (Fucciolo et al. 2003, Ketterling et al. 2002, Ketterling et al., 2001, Ketterling et al. 2000). INHS estimates have ranged from 9.1 acres in 1999 to our current estimate of 11.5 acres (4.66 ha), based on careful mapping of soils and vegetation in 2002 and 2003. The ISGS states that their 2002 and 2003 estimates may be influenced by wetter than normal winters 2001-2002, and winters and springs 2002-2003 (Fucciolo et al. 2003, Ketterling et al. 2002, Ketterling et al. 2001). The portions of the site (6.5 acres) mapped by INHS as nonwetland do not support hydrophytic vegetation and, for the most part, lack hydric soils. However, for the last three out of a total of five years, both INHS and ISGS have found that greater than the required 9.15 acres of created wetland exist on site.

Project goal 2: The created wetland should meet minimum standards as to floristic composition.

A. Survival of Planted Species

Woody Species - The wetland mitigation plan called for creation of 7.3 acres of forested wetland and 1.4 acres of shrub scrub wetland. The area designated for forested wetland was not planted, and 0.77 ha (1.9 acres) of forested (oak-hickory) wetland was planted in the area designated for scrub shrub. Cypress – gum wetland has been substituted for scrub shrub, and 0.49 ha (1.2 acres) of this planting type has been superimposed over the emergent wetland planting. Exactly what species were planted, and in what numbers is unknown. In the oak-hickory wetland, the following planted species are present in 2003: *Quercus palustris, Quercus lyrata, Quercus bicolor, Liquidambar styraciflua, Nyssa sylvatica, Carya illinoensis, Acer rubrum, Fraxinus pennsylvanica, Betula nigra, Carpinus caroliniana, Crateagus phaenopyrum, Cornus obliqua,* and at least one individual of *Aronia prunifolia.* In the emergent wetland the following planted woody species are still present: *Taxodium distichum, Acer rubrum, Fraxinus pennsylvanica, Quercus lyrata, Quercus palustris, Betula nigra, Cephalanthus occidentalis, Crateagus phaenopyrum, Itea virginica,* and *Callicarpa dichotoma.* Both sites support abundant natural regeneration of *Acer rubrum, Fraxinus pennsylvanica, Betula nigra,* and *Cornus obliqua*, which makes accurate assessment of planted stock impossible for these species.

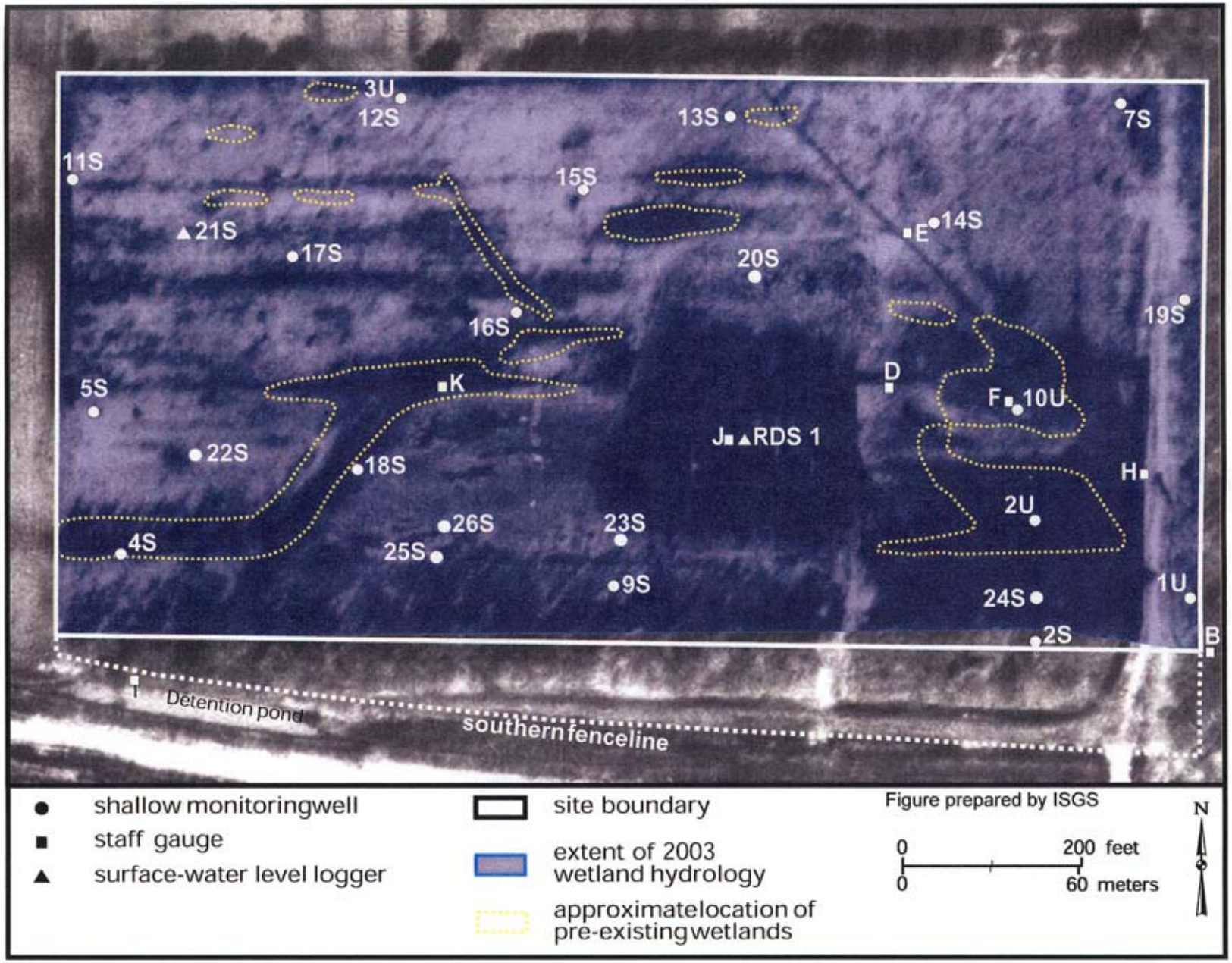

Figure 1. Estimated extent of 2003 wetland hydrology.

In the 1.9 acre oak-hickory wetland (wet meadow) the most abundant shrub layer species for the last three years have been *Fraxinus pennsylvanica,* and *Acer rubrum.* Beginning in 2002, this area has supported a dominant shrub layer. Total shrub layer density decreased from 1869 indiv./acre in 2002 to1190/acre this year. Planted species density remained nearly constant at 478/acre or 908 total. Plantings were supposed to occur at a rate of 500 indiv./acre for 9.5 acres or 4750 stems total (Table 1, Plocher et al. 2002).

In the1.2 acre emergent wetland, the shrub layer has also decreased in density and has been dominated by *Salix nigra* and *Acer rubrum* since 2001. Here, the shrub stage individuals appeared more clumped in distribution and the community as a whole does not yet support a dominant shrub layer. It is likely, however, that this community will develop a dominant shrub layer within a year or two and, along with the wet meadow, eventually succeed to floodplain forest. Total shrub layer density is 1204 indiv./acre, compared to 1832 indiv./acre in 2002. Planted species decreased slightly to a density of 152/acre or 182 total. Plantings were supposed to occur at a rate of 1000 indiv./acre for 1.4 acres or 1400 stems total (Table 2, Plocher et al. 2002).

Herbaceous species – Within the excavated portion of the site, a 0.49 ha (1.2 acre) emergent wetland has become established, thus exceeding the planned 0.84 acre. In the emergent wetland area, herbaceous species were planted in five, 20 ft X 50 ft, and one 20 ft X 30 ft, pods, each consisting of a number (two to eight) of smaller cells of varying sizes. The corner stakes of the planting cells had been removed prior to initial sampling , and the planted herbaceous species had begun to spread beyond their cells.

We identified nine planted herbaceous species: *Scirpus americanus, Scirpus validus, Scirpus atrovirens, Sparganium eurycarpum, Sagittaria latifolia, Alisma plantago aquatica, Iris shrevii, Pontederia cordata,* and *Eleocharis erythropoda. Eleocharis erythropoda* appears to have been substituted for *E. acicularis,* and *P. cordata* for *Sagittaria rigida. Sagittaria latifolia* and *Scirpus atrovirens* are naturally occurring and abundant onsite. *Scirpus cyperinus, Asclepias incarnata, Carex vulpinoidea,* and *Ludwigia polycarp*a are included on the planting list but do not appear to have been planted. They are, however, also naturally occurring and abundant onsite.

By 2002, the planted herbaceous species had spread beyond their planting cells to the point where it is no longer possible to assess the performance of individual cells. The plantings have done very well and coverage is approximately stable at 0.217 acre (compared to the original 0.13 acre planted). All species originally located in 1999 are still represented by healthy individuals. In particular, *Scirpus americanus, Scirpus validus, Scirpus atrovirens, Sparganium eurycarpum,* and *Sagittaria latifolia* have done very well (Table 3, Plocher et al. 2002).

Table 1. Shrub layer species composition of Wet Meadow (Site 2). Freq., Rel. Freq., Density (indiv./100 m^2), Rel. Density, Importance Value (%), N=5.

Species	Freq.	Rel. Freq.	Density	Rel. Dens.	I.V.
Fraxinus pennsylvanica	1.000	0.1087	6.600	0.2245	16.66
Acer rubrum	0.800	0.0870	7.000	0.2381	16.25
**Crateagus phaenopyrum*	1.000	0.1087	2.400	0.0816	9.51
**Quercus lyrata*	1.000	0.1087	2.400	0.0816	9.51
Cornus obliqua	0.800	0.0870	2.800	0.0952	9.11
Ulmus americana	0.800	0.0870	2.200	0.0748	8.09
**Carpinus caroliniana*	0.800	0.0870	2.000	0.0680	7.75
Platanus occidentalis	0.600	0.0652	1.200	0.0408	5.30
**Nyssa sylvatica*	0.600	0.0652	0.600	0.0204	4.28
**Quercus palustris*	0.600	0.0652	0.600	0.0204	4.28
Betula nigra	0.400	0.0435	0.800	0.0272	3.54
**Carya illinoensis*	0.400	0.0435	0.400	0.0136	2.86
**Liquidambar styraciflua*	0.200	0.0217	0.200	0.0068	1.43
**Quercus bicolor*	0.200	0.0217	0.200	0.0068	1.43
Total	9.200	1.0001	29.400	0.9998	100.00

Shrub density – 1190.3/acre
* = planted species
Planted species density – 477.7/acre

Table 2. Shrub layer species composition of Emergent Wetland (Site 1). Freq., Rel. Freq., Density (indiv./100 m^2), Rel. Density, Importance Value (%), N=4.

Species	Freq.	Rel. Freq.	Density	Rel. Dens.	I.V.
Salix nigra	1.000	0.2105	20.000	0.6723	44.14
**Acer rubrum*	0.750	0.1579	4.000	0.1345	14.62
Ulmus americana	0.750	0.1579	1.500	0.0504	10.41
Salix amygdaloides	0.750	0.1579	1.000	0.0336	9.57
Fraxinus pennsylvanica	0.500	0.1053	1.500	0.0504	7.79
**Taxodium distichum*	0.500	0.1053	1.250	0.0420	7.37
Populus deltoides	0.250	0.0526	0.250	0.0084	3.05
Platanus occidentalis	0.250	0.0526	0.250	0.0084	3.05
Total	4.750	1.0000	29.750	1.0000	100.00

Shrub density – 1204.5/acre
* = planted species
Planted species density – 151.8/acre

Table 3. Status of Planting Pods–2002. Species, aerial extent (ft^2), rating

Species	Aerial Extent (ft^2)	Qualitative Rating
Eleocharis erythropoda	160	fair
Scirpus americanus	2415	very good and spreading
Sparganium eurycarpum	3236	very good and spreading
Scirpus validus	1268	very good and spreading
Iris shrevii	316	fair
Scirpus atrovirens	408	good
Sagittaria latifolia	986	good
Alisma plantago aquatica	242	poor (present)
Pontederia cordata	416	poor (present)
Total	9447	

B. Vegetation

Overall, this site continues to exhibit good diversity and Floristic Quality (Taft et al. 1997). In 2003, in the emergent wetland and oak-hickory wetland, Floristic Quality is quite good and is approximately unchanged from last year (32.6 and 33.4 respectively, compared to 33.3 annd 33.7). All wetland plant communities continue to have Floristic Quality Indices of 20.0 or greater, and mean C values greater than 3.0. Diversity in the oak-hickory wetland has increased in every year of the study (110 species in 2003). In the emergent wetland, diversity decreased slightly, from 88 species to 81.

The emergent wetland is dominated by *Phyla lanceolata, Ludwigia palustris, Juncus acuminatus, Polygonum hydropiperoides, Panicum rigidulum* and *Cyperus pseudovegatus. Ludwigia palustris, Phyla lanceolata* and *Penthorum sedoides* have greatly increased since last year, while *Scirpus atrovirens, Carex normalis* and *Acer rubrum* seedlings greatly decreased. The weedy *Phragmities communis* continues to increase in abundance, and the exotic *Typha angustifolia* is still present. Following herbicide application in 2002, six stems of the exotic *Callicarpa dichotoma* have resprouted (Table 4, Appendix 1).

In the wet meadow (oak-hickory wetland) *Lespedeza cuneata, Polygonum hydropiperoides,* and *Scirpus atrovirens* greatly increased, while *Panicum clandestinum* and *Polygonum cespitosum* decreased. Dominant understory species in 2003 were *Juncus interior, Pycnanthemum tenuifolium, Polygonum hydropiperoides, Panicum acuminatum, Ulmus americana* and *Lespedeza cuneata. Fraxinus pennsylvanica* and *Acer rubrum* continue to dominate the shrub layer. The very uncommon *Rhexia virginica* (CC=10) remains present in this community and the rare grass *Panicum scoparium* (CC= 9) reappeared this year (Table 5, Appendix 1). Although the noxious weed *Lespedeza cuneata* has again become abundant (sixth most dominant), imminent canopy closure at this site should result in the disappearance of this shade intolerant species.

Beyond the excavated area, the non-wet shrubland in the western portion of the site is dominated by *Acer rubrum* and *Rubus pensylvanicus* in the shrub and sapling layers. *Festuca pratensis* and *Vernonia missurica* dominate the understory. The wet shrubland in the eastern half of the site is still dominated by *Fraxinus pennsylvanica* and *Acer rubrum* in the sapling layer, while the understory remains sparse. The ditchbank community is dominated by *Phyla lanceolata, Ludwigia palustris* and *Leersia lenticularis* (Appendix 1).

At this time, only one of the plant communities continues to have dominant species that are weedy or exotic. *Festuca pratensis* remains the most dominant understory species in the shrubland. The continued abundance of *Lespedeza cuneata* in the oak-hickory wetland, is somewhat of a concern however, as is the presence of *Phragmites communis* and a few individuals of *Callicarpa dichotoma* in the emergent wetland. The *Phyla lanceolata* now dominant in the ditchbank community and emergent wetland might be considered weedy (CC= 1), but this native species is typical of open wetlands. The oak–hickory wetland again showed an increase in number of naturally occurring species and all communities have less than 50% exotic or weedy species (actually less than 25%). In the emergent wetland, Floristic Quality (without planted species) remained approximately stable (27.8 to 27.4) and percent weedy/exotic increased slightly from 13.6% to 15.4%. In the oak-hickory wetland, Floristic Quality (without planted species) also remained approximately stable (28.9 to 29.1) as did percent weedy/exotic species (21.3% to 21.8%). Floristic Quality increased in the ditch community (22.5 to 28.0) (Appendix 1, Plocher et al. 2002). The State listed species, *Eryngium prostratum* (Endangered), continues to thrive. Although decreased in abundance from last year (emergent - 69.2 m^2 to 24.2 m^2, dithbank – 7.1 m^2 to 2.0 m^2), the species is still quite common at the site.

Table 4. Understory species composition of Emergent Wetland (Site 1). Freq., Rel. Freq., Dominance (m^2/m^2), Rel. Dom., Importance Value (%), N=15.

Species	Freq.	Rel. Freq.	Dom.	Rel. Dom	I.V.
Phyla lanceolata	0.7857	0.1009	0.1393	0.1014	10.11
Ludwigia palustris	0.5000	0.0642	0.1700	0.1238	9.40
Juncus acuminatus	0.6429	0.0826	0.1193	0.0869	8.48
Polygonum hydropiperoides	0.3571	0.0459	0.1450	0.1056	7.58
Panicum rigidulum	0.5000	0.0642	0.1086	0.0791	5.70
Cyperus pseudovegatus	0.4286	0.0550	0.0464	0.0338	4.44
Penthorum sedoides	0.2143	0.0275	0.0536	0.0390	3.32
*Scirpus americanus**	0.1429	0.0184	0.0643	0.0468	3.26
Paspalum laeve	0.2857	0.0367	0.0336	0.0245	3.06
Leersia lenticularis	0.2857	0.0367	0.0321	0.0234	3.00
Ulmus americana	0.2143	0.0275	0.0286	0.0208	2.42
Echinochloa muricata	0.2143	0.0275	0.0250	0.0182	2.29
Scutellaria lateriflora	0.2143	0.0275	0.0179	0.0130	2.02
*Sagittaria latifolia**	0.1429	0.0184	0.0286	0.0208	1.96
Scirpus atrovirens	0.1429	0.0184	0.0250	0.0182	1.83
Polygonum amphibium	0.0714	0.0092	0.0357	0.0260	1.76
Carex normalis	0.1429	0.0184	0.0214	0.0156	1.70
Phragmites communis	0.1429	0.0184	0.0214	0.0156	1.70
Mimulus alatus	0.1429	0.0184	0.0193	0.0141	1.63
Bidens connata	0.1429	0.0184	0.0143	0.0104	1.44
Eryngium prostratum	0.1429	0.0184	0.0143	0.0104	1.44
Asclepias incarnata	0.1429	0.0184	0.0121	0.0088	1.36
Fraxinus pennsylvanica	0.1429	0.0184	0.0121	0.0088	1.36
Eupatorium serotinum	0.1429	0.0184	0.0107	0.0078	1.31
Carex lupulina	0.0714	0.0092	0.0214	0.0156	1.24
*Alisma plantago aquatica**	0.0714	0.0092	0.0179	0.0130	1.11
Juncus interior	0.0714	0.0092	0.0179	0.0130	1.11
Pluchea camphorata	0.0714	0.0092	0.0179	0.0130	1.11
Ludwigia peploides	0.0714	0.0092	0.0143	0.0104	0.98
Andropogon virginicus	0.0714	0.0092	0.0107	0.0078	0.85
Eclipta prostrata	0.0714	0.0092	0.0107	0.0078	0.85
Acalypha rhomboidea	0.0714	0.0092	0.0107	0.0078	0.85
Sium suave	0.0714	0.0092	0.0086	0.0063	0.78
Eleocharis acicularis	0.0714	0.0092	0.0071	0.0052	0.72
Polygonum pensylvanicum	0.0714	0.0092	0.0071	0.0052	0.72
Acer rubrum	0.0714	0.0092	0.0071	0.0052	0.72
Bidens frondosa	0.0714	0.0092	0.0050	0.0036	0.64
Juncus brachycarpus	0.0714	0.0092	0.0036	0.0026	0.59
Rotala ramosier	0.0714	0.0092	0.0036	0.0026	0.59
Hypericum mutilum	0.0714	0.0092	0.0036	0.0026	0.59
*Eleocharis erythropoda**	0.0714	0.0092	0.0021	0.0015	0.53
Panicum capillare	0.0714	0.0092	0.0021	0.0015	0.53
*Scirpus validus**	0.0714	0.0092	0.0014	0.0010	0.51
Lycopus americanus	0.0714	0.0092	0.0014	0.0010	0.51
Lindernia dubia	0.0714	0.0092	0.0007	0.0005	0.49
Total	7.7856	1.0010	1.3735	1.0000	100.05

* = planted species

Table 5. Understory species composition of Wet Meadow (Site 2). Freq., Rel. Freq., Dominance (m^2/m^2), Rel. Dom., Importance Value (%), N=9.

Species	Freq.	Rel. Freq.	Dom.	Rel. Dom.	I.V.
Juncus interior	0.900	0.0726	0.185	0.1067	8.96
Pycnanthemum tenuifolium	0.700	0.0564	0.145	0.0836	7.00
Polygonum hydropiperoides	0.700	0.0564	0.115	0.0663	6.14
Panicum acuminatum	0.700	0.0564	0.110	0.0634	5.99
Ulmus americana	0.700	0.0564	0.092	0.0531	5.47
Lespedeza cuneata	0.600	0.0484	0.105	0.0606	5.45
Solidago canadensis	0.600	0.0484	0.090	0.0519	5.01
Carex normalis	0.700	0.0564	0.075	0.0432	4.98
Scirpus atrovirens	0.500	0.0403	0.085	0.0490	4.47
Rubus pensylvanicus	0.500	0.0403	0.082	0.0473	4.38
Acer rubrum	0.600	0.0484	0.060	0.0346	4.15
Lycopus americanus	0.400	0.0323	0.043	0.0248	2.85
Acalypha rhomboidea	0.400	0.0323	0.042	0.0242	2.83
Panicum rigidulum	0.200	0.0161	0.060	0.0346	2.54
Echinochloa muricata	0.300	0.0242	0.045	0.0260	2.51
Polygonum pensylvanicum	0.300	0.0242	0.032	0.0185	2.14
Vernonia missurica	0.300	0.0242	0.029	0.0167	2.05
Euthamia graminifolia	0.200	0.0161	0.040	0.0231	1.96
Setaria glauca	0.300	0.0242	0.023	0.0133	1.87
Panicum anceps	0.300	0.0242	0.023	0.0133	1.87
Fraxinus pennsylvanica	0.200	0.0161	0.035	0.0202	1.82
Scutellaria lateriflora	0.300	0.0242	0.017	0.0098	1.70
Helenium autumnale	0.200	0.0161	0.030	0.0173	1.67
Eupatorium serotinum	0.200	0.0161	0.025	0.0144	1.53
Erechtites hieracifolia	0.200	0.0161	0.025	0.0144	1.53
Panicum clandestinum	0.100	0.0081	0.020	0.0115	0.98
Solanum carolinense	0.100	0.0081	0.020	0.0115	0.98
Bidens frondosa	0.100	0.0081	0.010	0.0058	0.69
Panicum virgatum	0.100	0.0081	0.010	0.0058	0.69
Mimulus alatus	0.100	0.0081	0.010	0.0058	0.69
Phyla lanceolata	0.100	0.0081	0.010	0.0058	0.69
Boehmeria cylindrica	0.100	0.0081	0.010	0.0058	0.69
Andropogon virginicus	0.100	0.0081	0.005	0.0029	0.55
Aster simplex	0.100	0.0081	0.005	0.0029	0.55
Cornus obliqua	0.100	0.0081	0.005	0.0029	0.55
Hypericum mutilum	0.100	0.0081	0.005	0.0029	0.55
Phragmites communis	0.100	0.0081	0.005	0.0029	0.55
Juncus brachycarpus	0.100	0.0081	0.003	0.0017	0.49
Desmodium paniculatum	0.100	0.0081	0.003	0.0017	0.49
Total	12.400	1.0002	1.734	1.0002	100.01

C. Cover Type Report

Little change since last year.

Shrubland – This community is located in the western and north-central parts of the site. *Acer rubrum* dominates the sapling layer, and *Rubus pensylvanicus* the shrub layer, while *Festuca pratensis* and *Vernonia missurica* dominate the understory. Trees appear to be about 13 years old.

Wet Shrubland – This community is located in the eastern portion of the site. *Acer rubrum* and *Fraxinus pennsylvanica* dominate the sapling layer. Due to heavy shade, the understory is sparse. Species diversity remains stable since last year. Trees appear to be about 18 years old.

Wet Meadow – This community is now reduced to small, isolated patches scattered throughout the site, and will eventually succeed to forest. The herb layer is dominated by *Echinochloa muricata, Festuca pratensis, Lysimachia nummularia,* and *Panicum rigidulum.*

Floodplain Forest – Several areas in the southern portion of the site support floodplain forest. The majority of the trees are 45 to 65 years old, with scattered individuals aged about 95 years. *Fraxinus pennsylvanica, Quercus palustris,* and *Betula nigra* dominate the overstory, while *Fraxinus pennsylvanica* dominates the sapling layer. The understory is dominated by *Elymus virginicus, Festuca pratensis* and *Impatiens capensis.*

Emergent Wetland – In the central portion of the site, within an excavated area, an emergent wetland has become established. The dominant species are *Phyla lanceolata, Ludwigia palustris, Juncus acuminatus, Polygonum hydropiperoides, Panicum rigidulum* and *Cyperus pseudovegatu.* This community is of good natural quality and harbors a population of the State Endangered *Eryngium prostratum.*

Wet Meadow (oak-hickory wetland) – Within the excavated area, adjacent to the emergent wetland, a wet meadow has become established. The dominant understory species are *Juncus interior, Pycnanthemum tenuifolium, Polygonum hydropiperoides, Panicum acuminatum, Ulmus americana* and *Lespedeza cuneata.* The site is of good natural quality, and in 2003 the very uncommon plant species *Rhexia virginica* (CC=10) and *Panicum scoparium* (CC=9) were again observed. The site now supports a shrub/sapling layer dominated by *Fraxinus pennsylvanica* and *Acer rubrum.*

Ditch/Wet Meadow – This community has been recently created (1996) at the southeast border of the site. We mention this somewhat artificial community here because it has good natural quality and harbors several very uncommon species, including *Rhexia virginica* (CC=10), *Pluchea camphorata* (CC = 8), and the State Endangered *Eryngium prostratum.* The dominant species are *Ludwigia palustris, Phyla lanceolata* and *Leersia lenticularis* (Table 6).

Table 6. Plant Communities Present

A. Emergent Wetland

Understory – dominant - *Phyla lanceolata, Ludwigia palustris, Juncus acuminatus, Polygonum hydropiperoides, Panicum rigidulum, Cyperus pseudovegatus*

Understory - occasional – *Scirpus atrovirens, Paspalum laeve, Lycopus americanus, Pluchea camphorata, Ludwigia polycarpa, Eryngium prostratum*

B. Wet Meadow (oak-hickory wetland)

Shrub/sapling – dominant – *Fraxinus pennsylvanica, Acer rubrum*
Understory – dominant – *Juncus interior, Pycnanthemum tenuifolium, Ulmus americana, Polygonum hydropiperoides, Panicum acuminatum, Lespedeza cuneata*

Shrub/sapling–occasional– *Quercus palustris, Cornus obliqua, Crateagus phaenopyrum*
Understory – occasional – *Lycopus americanus, Panicum rigidulum, Carex normalis Panicum anceps, Andropogon virginicus, Rhexia virginica*

C. Floodplain Forest

Overstory- dominant – *Quercus palustris, Betula nigra, Fraxinus pennsylvanica*
Sapling/Shrub – dominant – *Fraxinus pennsylvanica*
Understory – dominant – *Elymus virginicus, Festuca pratensis, Impatiens capensis*

Overstory – occasional – *Acer rubrum, Ulmus americana, Gleditsia triacanthos*
Sapling/Shrub–occasional– *Quercus palustris, Acer negundo, Symphoricarpos orbiculatus*
Understory – occasional – *Cinna arundinacea, Glyceria striata, Lysimachia nummularia*

D. Wet Shrubland

Sapling– dominant – *Acer rubrum, Fraxinus pennsylvanica*

Sapling – occasional – *Betula nigra, Ulmus americana, Diospyros virginiana,*
Shrub – occasional – *Ulmus americana, Rubus occidentalis, Rosa multiflora*
Understory – occasional – *Festuca pratensis, Lysimachia nummularia, Geum canadense*

E. Shrubland

Sapling – dominant – *Acer rubrum*
Shrub – dominant – *Rubus pensylvanicus*
Understory – dominant – *Festuca pratensis, Vernonia missurica*

Sapling – occasional – *Fraxinus pennsylvanica, Gleditsia triacanthos, Acer negundo*
Shrub – occasional – *Rosa multiflora, Symphoricarpos orbiculatus, Eleagnus angustifolia*
Understory – occasional – *Juncus interior, Euthamia graminifolia, Solidago canadensis*

F. Ditch/Wet Meadow

Understory – dominant – *Phyla lanceolata, Ludwigia palustris, Leersia lenticularis*

Understory–occasional– *Lobelia cardinalis, Eryngium prostratum, Pluchea camphorata*

Faunal Surveys

Amphibians and Reptiles

Amphibians:
1. Blanchard's Cricket Frog (*Acris crepitans blanchardi*) - 1999, 2000, 2001, 2002, 2003
2. Cope's Gray Treefrog (*Hyla chrysoscelis*) - 1999, 2000, 2001, 2002, 2003
3. Spring Peeper (*Pseudacris crucifer*) - 1999, 2000, 2002, 2003
4. Western Chorus Frog (*Pseudacris triseriata*) -1999, 2000, 2001, 2002, 2003
5. Southern Leopard Frog (*Rana sphenocephala*) – 1999, 2000, 2001, 2002, 2003
6. Northern Crawfish Frog (*Rana areolata circulosa*) – 2002, 2003
7. Smallmouth Salamander (*Ambystoma texanum*) – 2000, 2001, 2002, 2003
8. Spotted Salamander (*Ambystoma maculatum*) – 2001, 2003
9. Tiger Salamander (*Ambystoma tigrinum*) - 2001
10. Central Newt (*Notophthalmus viridescens louisianensis*) – 2002, 2003

Reptiles:
1. Eastern Box Turtle (*Terrepene carolina*) – 2000, 2001, 2002, 2003
2. Common Snapping Turtle (*Chelydra serpentina*) – 2001, 2002
3. Painted turtle (*Chrysemys picta*) - 2002
4. Five Lined Skink (*Eumeces fasciatus*) – 2002, 2003
5. Prairie King Snake (*Lampropeltis calligaster calligaster*) – 2003

Species Observations

Blanchard's Cricket Frog
On 22 July, two Blanchard's cricket frogs were observed in the forested area. Twelve, including six young of the year, were observed in the emergent wetland.

Cope's Gray Treefrog
On 22 July, one Cope's gray treefrog was observed in the forested area. One Cope's gray treefrog was observed in the forested area on 17 September and numerous tadpoles and eleven metamorphs were observed in the emergent wetland. On 10 October, two Cope's gray treefrog young of the year were observed in the forested area. Four tadpoles and two metamorphs were collected.

Spring Peeper
One spring peeper was observed in the wet forbland on 25 March, and one in the forested area on 22 July. On 10 October, one spring peeper was observed in the forested area and males were heard calling.

Western Chorus Frog
Western chorus frogs were observed in forested areas on each site visit: five on 25 March, three on 8 May, 38 on 22 July, numerous on 23 July, seven on 27 August, eight on 17 September and nine on 10 October. Five on 25 March and one on 10 October were observed in the wet forbland. Males were heard calling on 10 October. Three individuals were collected.

Southern Leopard Frog
On 25 March, 65 ranid egg masses were observed in the emergent wetland. Southern leopard frog tadpoles were observed in the wet forbland and in the emergent wetland on 8 May. Two young of the year southern leopard frogs were observed in the forested area and one in the emergent wetland on 22 July. On 23 July two young of the year were observed in the forested area.

Northern Crawfish Frog
Ranid egg masses were observed in the emergent wetland on 25 March, and northern crawfish frog tadpoles were observed on 8 May. On 22 July, one young of the year was observed in the emergent wetland.

Smallmouth Salamander
Smallmouth salamander egg masses were observed in the forested area (ephemeral pond) on 25 March. Smallmouth salamander larvae were observed throughout the site, and four were collected in the forested area, on 8 May. On 22 July, one young of the year was observed in the forested area.

Spotted Salamander
On 25 March, four spotted salamander egg masses were observed in the forested area (ephemeral pond) and one larva was observed in the emergent wetland.

Central Newt
Two male central newts were observed in the emergent wetland on 25 March.

Eastern Box Turtle
Eastern box turtles were observed in the forested area on all but the August site visit: three on 25 March, five on 8 May, three on 22 July, two on 23 July, one on 17 September and eight on 10 October. Juveniles were observed on 25 March and 8 May.

Five Lined Skink
On 23 July, one five lined skink was observed in the forested area.

Prairie King Snake
On 23 July, one prairie king snake was observed under a snake board in the wet forbland.

Nine species of amphibians were observed during the 2003 field season. The central newt, previously unknown in the county, and the crawfish frog, uncommon throughout Illinois, were observed for the second consecutive year. Blanchard's cricket frog, Cope's gray treefrog, western chorus frog, and southern leopard frog have now been observed in all five years (1999-2003) of the survey, and the spring peeper and smallmouth salamander in four out of five years. Eggs of leopard frogs and smallmouth salamanders have been observed in each of the last four years. Larvae/tadpoles of smallmouth salamanders, Cope's gray treefrogs, and southern leopard frogs have been positively identified in at least three of the last five years. It is clear that this site is an important habitat for amphibian reproduction. Over the last five years, evidence of recruitment (eggs, larvae/tadpoles, metamorphs) has been observed for nine species: Blanchard's cricket frog, western chorus frog, spring peeper, Cope's grey tree frog, southern leopard frog, crawfish frog, smallmouth salamander, spotted salamander and tiger salamander. Fowler's toad and bullfrog, although common locally, have never been observed at this site. This year an unusual phenomenon was noted: presence of Cope's gray treefrog tadpoles and metamorphs in ephemeral ponds inundated (on 17 September) for no more than 17 days, a remarkably brief period to go from egg to metamorphosis.

Three reptile species were observed during the 2003 field season. Eastern box turtles have now been observed in each of the last four years, and juveniles observed for the second consecutive year. A lizard species (five lined skink) was witnessed for the second consecutive year. After five years, the presence of snake species was finally confirmed (one prairie kingsnake). The scarcity of snakes at this site, despite suitable habitat, is unusual.

Avifauna

The avian composition of the site has not noticeably changed during the monitoring period. This year a total of 198 individuals of 41 species, including three migrant species, were

detected during our censuses (Table 7). In the five year period, the number of species observed ranged from 41 to 49, and number of individuals ranged from 191 to 310. In the four years in which spring sampling was done, the number of migrant species ranged from three to seven. No Illinois endangered, threatened or watch list species were observed. In all years, good numbers of common forest, grassland and scrub habitat birds were observed at the site. Consistent with the small size of habitat fragments present, no resident area sensitive species were found.

Table 7. Breeding bird census results. Values represent sum of two censuses. Pt 1= wet forest, pond; Pt 2= wet meadow; Pt 3 = wet shrubland, emergent; Pt 4= scrub. M = migrant.

Species	pt 1	pt 2	pt 3	pt 4	Total
turkey vulture	4	0	0	0	4
red tailed hawk	2	0	0	1	3
American kestral	1	1	0	2	4
northern bobwhite	1	0	0	0	1
killdeer	2	0	0	1	3
mourning dove	6	0	5	0	11
ruby throated hummingbird	0	1	0	2	3
red bellied woodpecker	3	0	1	0	4
downy woodpecker	2	0	1	0	3
flicker	0	0	1	0	1
chimney swift	0	8	0	0	8
tree swallow	0	8	0	0	8
blue jay	2	0	1	1	4
American crow	1	3	4	0	8
Carolina chickadee	5	0	2	2	9
house wren	1	0	0	1	2
eastern wood pewee	2	0	0	2	4
blue grey gnatcatcher	1	0	2	0	3
eastern bluebird	0	1	0	0	1
American robin	3	0	3	1	7
grey catbird	0	0	3	3	6
northern mockingbird	0	0	1	0	1
brown thrasher	0	0	2	4	6
European starling	0	1	6	0	7
white eyed vireo	0	0	2	1	3
yellow throated vireo	0	0	1	0	1
yellow rumped warbler[M]	0	3	0	1	4
black throated green warbler[M]	0	2	0	0	2
American redstart	0	1	0	0	1
common yellowthroat	0	3	0	0	3
northern cardinal	1	2	2	3	8
rose breasted grosbeak[M]	0	0	1	0	1
indigo bunting	0	3	0	4	7
field sparrow	0	0	2	5	7
song sparrow	0	2	2	3	7
red winged blackbird	11	6	6	4	27
common grackle	0	2	0	0	2
brown headed cowbird	2	0	3	0	5
orchard oriole	0	2	0	0	2
Baltimore oriole	0	0	1	0	1
American goldfinch	0	5	0	1	6
Number of individuals	50	54	52	42	198
Number of species	18	18	22	19	41

Summary and Recommendations

In September 2001, A close out meeting was held on site. In attendence were representatives from Illinois Department of Transportation, U. S. Army Corps of Engineers, U. S. Fish and Wildlife Service, Illinois Department of Natural Resources, Illinois State Geological Survey, and Illinois Natural History Survey. At this meeting the Corps indicated that, after three years of monitoring, this site would be considered to be a successful wetland creation suitable for mitigation of wetland impacts due to IL 13 highway construction. However, the following two conditions need to be met: 1) The exotic, planted Chinese beauty berry (*Callicarpa dichotoma*) and 2) the invasive giant reed (*Phragmites communis*) needed to be removed from the emergent wetland. In summer 2002, INHS personnel were able to locate 28 individuals of *Callicarpa dichotoma.* All located stems were pruned and treated with the herbicide Rodeo. We attempted to apply the same treatment to *Phragmites communis,* however this species has now increased in abundance to the point where removal will require professional services. In the summer of 2003, six stems of *Callicarpa dichotoma* had resprouted and were subsequently removed. Although much less abundant, this species is, unfortunately, still present here.

Overall, this site has developed quite well. Shallow excavation and berm construction have resulted in about 4.66 ha (11.5 acres) of wetland creation (certainly more than the required 9.15 acres). Planted herbaceous and woody species are doing well. In the emergent wetland, nine planted herbaceous species are present and healthy and most are reproducing and spreading well beyond their original planting cells. In the oak-hickory and cypress-gum plantings, 15 planted woody species are present and nine of these are relatively abundant. Although planted woody species have experienced mortality, the plantings still remain abundant and healthy enough to represent a significant component of the developing forest. Diversity of naturally occurring plant species has steadily increased, and all wetland plant communities on site currently have Floristic Quality Indices (FQI's) of 20.0 or above. The emergent wetland and wet meadow (oak-hickory wetland) currently occupying the excavated area support especially high natural quality (FQI = 32.6 and 33.4, including planted species). In these two communities, healthy populations of the State Endangered *Eryngium prostratum*, and other very uncommon plants (*Pluchea camphorata, Rhexia virginica, Panicum scoparium*) occur. All communities have much less than 50% exotic or weedy species. Although one community, shrubland, has weedy species among the three most dominant (*Festuca pratensis*), this species will certainly decrease as forest cover increases. Although *Lespedeza cuneata* is still abundant in the wet meadow area, this shade intolerant species should decrease as the site succeeds to forest. We estimate that without management the entire site will succeed to forest. The wet meadow (oak- hickory wetland), along with most of the site, should develop into bottomland or floodplain forest dominated by green ash, red maple, river birch and possibly pin oak. The emergent wetland with cypress-gum wetland superimposed appears to be developing into open forest dominated by black willow and red maple, with marsh vegetation interspersed.

The site provides important breeding and foraging habitat for birds and herptiles. Over 40 bird species have been noted each year. Ten amphibian species and five species of reptiles have been observed, including the relatively uncommon crayfish frog. Nine amphibian species and one species of reptile (eastern box turtle) reproduce on-site. This site will continue to support a considerable area of ephemeral, fish free ponds, an uncommon feature in Illinios and critical for amphibian reproduction.

As long as establishment of forested systems (with limited areas of open marsh) is considered acceptable for this site, and as long as the presence of *Phragmites communis* and *Typha angustifolia* can be tolerated (both are quite abundant in the general area and would likely reinvade if extirpated), the site can now be considered a successful and ecologically valuable wetland creation. Unless otherwise noted, this will be the final monitoring report for this site.

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Appendix 1: Wetland Determinations

and Species Lists

Fig. 3. Photo location 1. Wet Meadow and Emergent Wetland

Fig. 4. Photo location 2. Emergent Wetland

Fig. 5. Photo location 3. Emergent Wetland

Fig. 6 Photo location 4. Emergent Wetland and Wet Meadow

ROUTINE ON-SITE WETLAND DETERMINATION

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Emergent Wetland
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4

Location: eastern part of the central portion of the site (adjacent to Site 2)

Do normal environmental conditions exist at this site? Yes: X No:
Has the vegetation, soil, or hydrology been significantly disturbed? Yes: No: X

VEGETATION

Dominant Plant Species	Stratum	Indicator Status
1. *Phyla lanceolata*	herb	OBL
2. *Ludwigia palustris*	herb	OBL
3. *Juncus acuminatus*	herb	OBL
4. *Polygonum hydropiperoides*	herb	OBL
5. *Panicum rigidulum*	herb	FACW
6. *Cyperus pseudovegatus*	herb	FACW

Percent of dominant species that are OBL, FACW, FAC+, or FAC: 100%

Hydrophytic vegetation: Yes: X No:
Rationale: More than 50% of dominants are OBL, FACW, FAC+, or FAC.

SOILS

Series and phase: Bonnie silt loam
On Saline County hydric soils list? Yes: X No:
Is the soil a histosol? Yes: No: X Histic epipedon present? Yes: No: X
Redox concentrations: Yes: X No: Redox depletions: Yes: X No:
Matrix color: 5Y 7/1
Other indicators: This soil is found in a level to depressional area on a floodplain.

Hydric soils: Yes: X No:
Rationale: Bonnie silt loam is a poorly drained soil that meets the requirements of the Natural Resource Conservation Service hydric soil indicator F3, depleted matrix.

ROUTINE ON-SITE WETLAND DETERMINATION

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Emergent Wetland
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4
Location: eastern part of the central portion of the site (adjacent to Site 2)

HYDROLOGY

Inundated: Yes: X No: Depth of standing water: 0.1 m (4 inches)
Depth to saturated soil: at surface
Overview of hydrological flow through the system: Primary hydrologic inputs to this site are precipitation and runoff from the surrounding uplands. Evapotranspiration and sheetflow are the major outputs.
Size of watershed: 2.59 km^2 (1 mi^2)
Other field evidence observed: wetland drainage pattern, bare soil areas, the site is an excavated depression.

Wetland hydrology: Yes: X No:
Rationale: The evidence cited above indicates that this site is flooded or saturated for a sufficient period during the growing season to meet the criterion of wetland hydrology.

WETLAND DETERMINATION AND RATIONALE:

Is the site a wetland?: Yes: X No:
Rationale: Hydrophytic vegetation, hydric soils and wetland hydrology are present. Therefore the site is a wetland. The site is not coded by the NWI.

Determined by: Allen Plocher (vegetation and hydrology)
Rick Larimore (vegetation and hydrology)
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ROUTINE ON-SITE WETLAND DETERMINATION

Site 1 (page 3 of 5)

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Emergent Wetland
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4
Location: eastern part of the central portion of the site (adjacent to Site 2)

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	FQI***
**Acalypha rhomboidea*	three seeded Mercury	herb	FACU	0
Acer rubrum	red maple	shrub/seedl	FAC	5
Acer saccharinum	silver maple	shrub/seedl	FACW	1
Alisma plantago aquatica	water plantain	herb	OBL	2
**Andropogon virginicus*	broomsedge	herb	FAC-	1
Asclepias incarnata	swamp milkweed	herb	OBL	4
***Bidens connata*	beggar's ticks	herb	OBL	2
***Bidens frondosa*	beggar's ticks	herb	FACW	1
Boehmeria cylindrica	false nettle	herb	OBL	3
Boltonia diffusa	false aster	herb	FACW	4
**Callicarpa dichotoma*	Chinese beautyberry	shrub	(planted)	
Carex lupulina	hop sedge	herb	OBL	5
Carex normalis	sedge	herb	FACW	4
Carex tribuloides	sedge	herb	FACW+	3
Cephalanthus occidentalis	button bush	shrub/seedl	OBL	4
Cicuta maculata	water hemlock	herb	OBL	4
Cornus obliqua	pale dogwood	shrub	FACW+	4
Cyperus pseudovegatus	flat sedge	herb	FACW	5
**Echinochloa muricata*	barnyard grass	herb	OBL	0
Eclipta prostrata	yerba de tajo	herb	FACW	2
Eleocharis acicularis	spike rush	herb	OBL	3
Eleocharis erythropoda	spike rush	herb	(planted)	3
Eryngium prostratum	eryngo	herb	OBL	5
Eupatorium perfoliatum	boneset	herb	FACW+	4
**Eupatorium serotinum*	late flowering thoroughwort	herb	FAC+	1
Fraxinus pennsylvanica	green ash	shrub/seedl	FACW	2
Helenium autumnale	sneezeweed	herb	FACW+	3

***Floristic Quality Index, as developed by Taft, Ladd, Wilhelm and Masters (1997)

(continued on following page)

ROUTINE ON-SITE WETLAND DETERMINATION

Site 1 (page 4 of 5)

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Emergent Wetland
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4
Location: eastern part of the central portion of the site (adjacent to Site 2)

SPECIES LIST (Continued)

Scientific name	Common name	Stratum	Wetland indicator status	FQI***
Hypericum mutilium	dwarf St. John's wort	herb	FACW	5
Iris shrevii	blue flag iris	herb	OBL	5
Itea virginica	sweet spires	shrub	(planted)	10
Juncus acuminatus	knotty leaved rush	herb	OBL	4
Juncus brachycarpus	rush	herb	FACW	5
Juncus effusus	rush	herb	OBL	4
Juncus interior	inland rush	herb	FAC+	3
Juncus marginatus	grass leaved rush	herb	FACW	5
Leersia lenticularis	catchfly grass	herb	OBL	5
Lindernia dubia	false pimpernel	herb	OBL	5
Liquidambar styraciflua	sweet gum	shrub	(planted)	6
Ludwigia palustris	marsh seed box	herb	OBL	4
Ludwigia peploides	creeping pimrose willow	herb	OBL	5
Lycopus americanus	water horehound	herb	OBL	3
Lycopus virginicus	bugleweed	herb	OBL	5
**Lysimachia nummularia*	moneywort	herb	FACW+	
Mimulus alatus	winged monkeyflower	herb	OBL	6
Nyssa sylvatica	black gum	shrub	(planted)	7
Onoclea sensibilis	sensitive fern	herb	FACW	5
Panicum acuminatum	panic grass	herb	FAC	2
**Panicum capillare*	witch grass	herb	FAC	0
Panicum rigidulum	Munro grass	herb	FACW	6
Paspalum laeve	smooth bead grass	herb	FACW-	2
Penthorum sedoides	ditch stonecrop	herb	OBL	2
**Phragmites communis*	common reed	herb	FACW+	1
Phyla lanceolata	fog fruit	herb	OBL	1
Platanus occidentalis	sycamore	shrub	FACW	3

***Floristic Quality Index, as developed by Taft, Ladd, Wilhelm and Masters (1997)

(continued on following page)

ROUTINE ON-SITE WETLAND DETERMINATION

Site 1 (page 5 of 5)

Field Investigators: Plocher, Larimore , Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Emergent Wetland
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4
Location: eastern part of the central portion of the site (adjacent to Site 2)

SPECIES LIST (continued)

Scientific name	Common name	Stratum	Wetland indicator status	FQI***
Pluchea camphorata	camphorweed	herb	FACW	8
Polygonum amphibium	water smartweed	herb	OBL	3
Polygonum hydropiperoides	mild water pepper	herb	OBL	4
****Polygonum pensylvanicum*	giant smartweed	herb	FACW+	1
Pontederia cordata	pickerelweed	herb	(planted)	8
Populus deltoides	cottonwood	sapl/shrub	FAC+	2
Quercus lyrata	overcup oak	sapl	(planted)	7
Quercus palustris	pin oak	sapl	(planted)	4
****Rotala ramosier*	tooth cup	herb	OBL	4
Rumex verticillatus	swamp dock	herb	OBL	5
Sagittaria latifolia	arrow head	herb	OBL	4
Salix amygdaloides	peach leaf willow	sapl/shrub	FACW	4
**Salix exigua*	sandbar willow	shrub	OBL	1
Salix nigra	black willow	sapl/shrub	OBL	3
Scirpus americanus	American bulrush	herb	(planted)	3
Scirpus atrovirens	green bulrush	herb	OBL	4
Scirpus cyperinus	wool grass	herb	OBL	5
Scirpus validus	great bulrush	herb	(planted)	4
Scutellaria lateriflora	mad dog scullcap	herb	OBL	4
Sium suave	water parsnip	herb	OBL	5
Sparganium eurycarpum	burreed	herb	(planted)	5
Taxodium distichum	bald cypress	shrub	(planted)	7
**Typha angustifolia*	narrow leaf cattail	herb	OBL	
**Typha latifolia*	common cattail	herb	OBL	1
Ulmus americana	American elm	shrub/seedl	FACW-	5
Verbena hastata	blue vervain	herb	FACW+	3
**Xanthium strumarium*	cocklebur	herb	FAC	0

***Floristic Quality Index, as developed by Taft, Ladd, Wilhelm and Masters (1997)

*=non-native or weedy (15.4%), **=annual, but desirable
FQI=R/√N=224/√67= 27.4, mean C=R/N=224/67= 3.3
FQI (including planted species) = 288/√78= 32.6, mean C=R/N=288/78=3.7

ROUTINE ON-SITE WETLAND DETERMINATION

Site 2 (page 1 of 5)

Field Investigators: Plocher, Larimore, Keene **Date:** 2 August 2002
Sect. No.:(7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Wet Meadow (oak, - hickory wetland)
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4

Location: central portion of site (adjacent to Site 1)

Do normal environmental conditions exist at this site? Yes: X No:
Has the vegetation, soil, or hydrology been significantly disturbed? Yes: No: X

VEGETATION

Dominant Plant Species	Stratum	Indicator Status
1. *Fraxinus pennsylvanica*	shrub	FACW
2. *Acer rubrum*	shrub	FAC
3. *Juncus interior*	herb	FAC+
4. *Pycnanthemum tenuifolium*	herb	FAC
5. *Polygonum hydropiperoides*	herb	OBL
6. *Panicum acuminatum*	herb	FAC
7. *Ulmus americana*	herb	FACW-
8. *Lespedeza cuneata*	herb	NI

Percent of dominant species that are OBL, FACW, FAC+, or FAC: 100%

Hydrophytic vegetation: Yes: X No:
Rationale: More than 50% of dominants are OBL, FACW, FAC+, or FAC.

SOILS

Series and phase: Bonnie silt loam
On Saline County hydric soils list? Yes: X No:
Is the soil a histosol? Yes: No: X Histic epipedon present? Yes: No: X
Redox concentrations: Yes: X No: Redox depletions: Yes: X No:
Matrix color: 5Y 7/1 and 2.5Y 6/2
Other indicators: This soil is found in a level to depressional area on a floodplain.

Hydric soils: Yes: X No:
Rationale: Bonnie silt loam is a poorly drained soil that meets the requirements of the Natural Resource Conservation Service hydric soil indicator F3, depleted matrix.

ROUTINE ON-SITE WETLAND DETERMINATION

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Wet Meadow (oak- hickory wetland)
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4

Location: central portion of the site (adjacent to Site 1)

HYDROLOGY

Inundated: Yes: No: X Depth of standing water: NA
Depth to saturated soil: 0.2 m (8 in)
Overview of hydrological flow through the system: Primary hydrologic inputs to this site are precipitation, runoff from the surrounding uplands and occasional overbank flow. Evapotranspiration and sheetflow are the major outputs.
Size of watershed: 2.59 km^2 (1 mi^2)
Other field evidence observed: The site is level to depressional on the landscape.
Wetland hydrology: Yes: X No:
Rationale: Field evidence indicates that this site is inundated or saturated for a sufficient portion of the growing season to meet the wetland hydrology criterion.

WETLAND DETERMINATION AND RATIONALE:

Is the site a wetland?: Yes: X No:
Rationale: Hydrophytic vegetation, hydric soils and wetland hydrology are present. Therefore the site is a wetland. The site is not coded by the NWI.

Determined by: Allen Plocher (vegetation and hydrology)
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ROUTINE ON-SITE WETLAND DETERMINATION

Site 2 (page 3 of 5)

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Wet Meadow (oak – hickory wetland)
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4
Location: central portion of the site (adjacent to Site 1)

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	FQI***
**Acalypha rhomboidea*	three seeded Mercury	herb	FACU	0
Acer negundo	box elder	shrub/seedl	FACW-	1
Acer rubrum	red maple	shrub/seedl	FAC	5
Acer saccharinum	silver maple	shrub/seedl	FACW	1
Agalinus purpurea	false foxglove	herb	FACW	6
Agalinus tenuifolia	slender false foxglove	herb	FACW	5
Agrimonia parviflora	swamp agrimony	herb	FAC+	5
**Ambrosia artemisiifolia*	common ragweed	herb	FACU	0
**Ambrosia bidentata*	lanceleaf ragweed	herb	FACU-	0
**Andropogon virginicus*	broomsedge	herb	FAC-	1
Apocynum cannabinum	dogbane	herb	FAC	2
Aronia prunifolia	chokeberry	shrub	(planted)	8
**Aster pilosus*	hairy aster	herb	FACU+	0
Aster simplex	panicled aster	herb	FACW	3
Aster vimineus	frost flower	herb	FACW-	3
Betula nigra	river birch	shrub/seedl	FACW	4
***Bidens aristosa*	beggar's ticks	herb	FACW	1
***Bidens frondosa*	beggar's ticks	herb	FACW	1
Boehmeria cylindrica	false nettle	herb	OBL	3
Boltonia diffusa	false aster	herb	FACW	4
**Callicarpa dichotoma*	Chinese beautyberry	shrub	(planted)	
Campsis radicans	trumpet creeper	herb	FAC	2
Carex normalis	sedge	herb	FACW	4
Carex squarrosa	sedge	herb	OBL	5
Carex vulpinoidea	fox sedge	herb	OBL	3
Carpinus caroliniana	iron wood	shrub	(planted)	6
Carya illinoensis.	pecan	shrub	(planted)	6
Catalpa speciosa	catalpa	shrub	FACU	–
Cicuta maculata	water hemlock	herb	OBL	4
Cirsium discolor	field thistle	herb	UPL	3
**Conyza canadensis*	horseweed	herb	FAC-	0
Cornus obliqua	pale dogwood	shrub	FACW+	4
Crateagus phaenopyrum	Washington thorn	shrub	(planted)	5
Crateagus viridis	green hawthorn	shrub	FACW	5
**Cyperus strigosus*	straw colored flat sedge	herb	FACW	0
Desmodium paniculatum	panicled tick trefoil	herb	FACU	2
Diospyros virginiana	persimmon	shrub/seedl	FAC	2

***Floristic Quality Index, as developed by J. Taft, D. Ladd, G. Wilhelm and L. Masters (1997)

(continued on following page)

ROUTINE ON-SITE WETLAND DETERMINATION

Site 2 (page 4 of 5)

Field Investigators: Plocher, Larimore , Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Wet Meadow (oak – hickory wetland)
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4
Location: central portion of the site (adjacent to Site1)

SPECIES LIST (continued)

Scientific name	Common name	Stratum	Wetland indicator status	FQI***
**Echinochloa muricata*	barnyard grass	herb	OBL	0
**Eleagnus umbellata*	Autumn olive	shrub	UPL	
Elymus canadensis	Canada wild rye	herb	FAC-	4
Elymus virginicus	Virginia wild rye	herb	FACW-	4
***Erechtites hieracifolia*	fireweed	herb	FACU	2
Eupatorium coelestinum	mistflower	herb	FAC+	3
Eupatorium perfoliatum	boneset	herb	FACW+	4
**Eupatorium serotinum*	late flowering thoroughwort	herb	FAC+	1
Euthamia graminifolia	grass leaf goldenrod	herb	FACW-	3
Fraxinus pennsylvanica	green ash	shrub/seedl	FACW	2
Helenium autmnale	sneezeweed	herb	FACW+	3
Hypericum mutilum	dwarf St. John's wort	herb	FACW	5
Impatiens capensis	jewelweed	herb	FACW	2
Ipomea lacunosa	small white morning glory	herb	FACW	1
Iva annua	sumpweed	herb	FAC	0
Juncus brachycarpus	rush	herb	FACW	5
Juncus dudleyi	Dudley's rush	herb	FAC	4
Juncus interior	inland rush	herb	FAC+	3
Juncus marginatus	grass leaved rush	herb	FACW	5
Lactuca floridana	blue lettuce	herb	FAC-	4
Leersia lenticularis	catchfly grass	herb	OBL	5
**Lespedeza cuneata*	Chinese bush clover	herb	NI	
Liquidambar styraciflua	sweet gum	shrub	(planted)	6
**Lonicera japonica*	Japanese honeysuckle	herb	FACU	
Ludwigia polycarpa	many fruited seedbox	herb	OBL	5
Lycopus americanus	water horehound	herb	OBL	3
**Lysimachia nummularia*	moneywort	herb	FACW+	
Mimulus alatus	winged monkey flower	herb	OBL	6
Nyssa sylvatica	black gum	shrub	(planted)	7
Onoclea sensibilis	sensitive fern	herb	FACW	5
**Oxalis stricta*	yellow wood sorrel	herb	FACU	0
Panicum acuminatum	panic grass	herb	FAC	2
Panicum anceps	panic grass	herb	FACW	3
Panicum clandestinum	deer tongue grass	herb	FACW	4
Panicum rigidulum	Munro grass	herb	FACW	6
Panicum scoparium	panic grass	herb	FACW	9
Panicum virgatum	switch grass	herb	FAC+	4

***Floristic Quality Index, as developed by J. Taft, D. Ladd, G. Wilhelm and L. Masters (1997)

(continued on following page)

ROUTINE ON-SITE WETLAND DETERMINATION

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Wet Meadow (oak – hickory wetland)
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4
Location: central portion of the site (adjacent to Site 1)

SPECIES LIST (Continued)

Scientific name	Common name	Stratum	Wetland indicator status	FQI***
Paspalum laeve	smooth bead grass	herb	FACW-	2
Penstemon digitalis	foxglove beardtongue	herb	FAC-	4
Penthorum sedoides	ditch stonecrop	herb	OBL	2
**Phragmites communis*	common reed	herb	FACW+	1
Phyla lanceolata	fogfruit	herb	OBL	1
Platanus occidentalis	sycamore	shrub/seedl	FACW	3
Pluchea camphorata	camphor weed	herb	FACW	8
Polygonum hydropiperoides	water pepper	herb	OBL	4
***Polygonum pensylvanicum*	giant smartweed	herb	FACW+	1
Polygonum punctatum	dotted smartweed	herb	OBL	3
Populus deltoides	cottonwood	sapl/shrub	FAC+	2
**Prunella vulgaris elongata*	self heal	herb	FAC	1
Pycnanthemum tenuifolium	mountain mint	herb	FAC	4
Quercus bicolor	swamp white oak	shrub	(planted)	7
Quercus imbricaria	shingle oak	shrub	FAC-	2
Quercus lyrata	overcup oak	shrub/seedl	(planted)	7
Quercus palustris	pin oak	shrub/seedl	(planted)	4
Rhexia virginica	meadow beauty	herb	OBL	10
Rhus coppalina	winged sumac	shrub	UPL	2
**Rosa multiflora*	multiflora rose	shrub	FACU	
Rosa setigera	Illinois rose	shrub	FACU+	5
Rubus pensylvanicus	black berry	shrub	FAC-	2
Salix amygdaloides	peach leaf willow	sapl/shrub	FACW	4
Salix nigra	black willow	sapl/shrub	OBL	3
Scirpus atrovirens	dark green bulrush	herb	OBL	4
Scirpus cyperinus	wool grass	herb	OBL	5
Scutellaria lateriflora	mad dog scullcap	herb	OBL	4
**Setaria glauca*	yellow foxtail	herb	FAC	
**Setaria viridis*	common foxtail	herb	UPL	
**Solanum carolinense*	horse nettle	herb	FACU-	0
**Solidago canadensis*	Canada goldenrod	herb	FACU	1
**Toxicodendron radicans*	poison ivy	herb	FAC+	1
**Typha angustifolia*	narrowleaf cattail	herb	OBL	
Ulmus americana	American elm	shrub/seedl	FACW-	5
Verbena hastata	blue vervain	herb	FACW+	3
Vernonia missurica	Missouri ironweed	herb	FAC+	5

***Floristic Quality Index, as developed by Taft, Ladd, Wilhelm and Masters (1997)

*=non-native or weedy (21.8%), **=annual, but desirable
FQI=R/√N=278/√91= 29.1, mean C=R/N=278/91= 3.1
FQI (including planted species)= 334/√100= 33.4, mean C= 334/100= 3.3

ROUTINE ON-SITE WETLAND DETERMINATION

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Shrubland
Legal Description: T.9S., R.5 E., Sect. 18, NE/4 SW/4

Location: western portion of the site

Do normal environmental conditions exist at this site? Yes: X No:
Has the vegetation, soil, or hydrology been significantly disturbed? Yes: No: X

VEGETATION

Dominant Plant Species	Stratum	Indicator Status
1. *Acer rubrum*	sapling	FAC
2. *Rubus pensylvanicus*	shrub	FAC-
3. *Festuca pratensis*	herb	FACU-
4. *Vernonia missurica*	herb	FAC+

Percent of dominant species that are OBL, FACW, FAC+, or FAC: 50%

Hydrophytic vegetation: Yes: No: X
Rationale: Not more than 50% of dominants are OBL, FACW, FAC+, or FAC.

SOILS

Series and phase: Banlic silt loam
On Saline County hydric soils list? Yes: No: X
Is the soil a histosol? Yes: No: X Histic epipedon present? Yes: No: X
Redox concentrations: Yes: X No: Redox depletions: Yes: No: X
Matrix color: 10YR 5/3
Other indicators: None

Hydric soils: Yes: No: X
Rationale: Banlic silt loam is a somewhat poorly drained soil that lacks hydric soil characteristics.

ROUTINE ON-SITE WETLAND DETERMINATION

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Shrubland
Legal Description: T.9S., R.5 E., Sect. 18, NE/4 SW/4

Location: western portion of the site

HYDROLOGY

Inundated? Yes: No: X Depth of standing water: NA
Depth to saturated soil: 1 m (40 in)
Overview of hydrological flow through the system: Primary hydrologic inputs to this site are precipitation and runoff from the surrounding uplands. Evapotranspiration and sheetflow are the major outputs.
Size of watershed: 2.59 km^2 (1 mi^2)
Other field evidence observed: none

Wetland hydrology: Yes: No: X
Rationale: Field evidence suggests that this site is not saturated or inundated for a sufficient duration during the growing season to meet the wetland hydrology criterion.

WETLAND DETERMINATION AND RATIONALE:

Is the site a wetland? Yes: No: X
Rationale: Hydrophytic vegetation, hydric soils and wetland hydrology are all absent. Therefore the site is not a wetland. The site is not coded by the NWI.

Determined by: Allen Plocher (vegetation and hydrology)
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ROUTINE ON-SITE WETLAND DETERMINATION

Site 3 (page 3 of 4)

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Shrubland
Legal Description: T.9S., R.5 E., Sect. 18, NE/4 SW/4
Location: western portion of the site

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	FQI***
**Acalypha rhomboidea*	three seeded Mercury	herb	FACU	0
Acer negundo	box elder	sapling, shrub, seedl	FACW-	1
Acer rubrum	red maple	sapling, shrub, seedl	FAC	5
**Andropogon virginicus*	broomsedge	herb	FAC-	1
Apocynum cannabinum	dogbane	herb	FAC	2
**Aster pilosus*	hairy aster	herb	FACU+	0
Betula nigra	river birch	shrub/sapl	FACW	4
Boehmeria cylindrica	false nettle	herb	OBL	3
Campsis radicans	trumpet creeper	herb	FAC	2
Carex pensylvanica	Pennsylvania sedge	herb	UPL	5
Catalpa speciosa	catalpa	sapling	FACU	–
Cicuta maculata	water hemlock	herb	OBL	4
Cornus obliqua	pale dogwood	shrub	FACW+	4
Corylus americana	hazel	shrub	FACU-	4
Crateagus mollis	red haw	sapling, shrub	FACW-	2
Desmodium paniculatum	panicled tick trefoil	herb	FACU	2
Diospyros virginiana	persimmon	sapling, shrub, seedl	FAC	2
**Eleagnus angustifolia*	Russian olive	sapling, shrub	FACU-	
***Erechtites hieracifolia*	fireweed	herb	FACU	2
Eupatorium coelestinum	mistflower	herb	FAC+	3
**Eupatorium serotinum*	late flowering thoroughwort	herb	FAC+	1
Euthamia graminifolia	grass leaved goldenrod	herb	FACW-	3
**Festuca pratensis*	English bluegrass	herb	FACU-	
Fraxinus pennsylvanica	green ash	sapling, shrub, seedl	FACW	2
Gleditsia triacanthos	honey locust	sapling, shrub, seedl	FAC	2
Impatiens capensis	jewelweed	herb	FACW	2
Juncus interior	inland rush	herb	FAC+	3
Juniperus virginiana	eastern red cedar	shrub/sapl	FACU	1
Lactuca floridana	blue lettuce	herb	FAC-	4
Liquidambar styraciflua	sweetgum	shrub	FACW	6

***Floristic Quality Index, as developed by J. Taft, D. Ladd, G. Wilhelm and L. Masters (1997)

(Species list continued on next page)

ROUTINE ON-SITE WETLAND DETERMINATION

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Shrubland
Legal Description: T.9S., R.5 E., Sect. 18, NE/4 SW/4
Location: western portion of the site

SPECIES LIST (Continued)

Scientific name	Common name	Stratum	Wetland indicator status	FQI***
**Lonicera japonica*	Japanese honeysuckle	herb	FACU	
Lycopus americanus	water horehound	herb	OBL	3
**Morus alba*	white mulberry	shrub	FAC	
Panicum acuminatum	panic grass	herb	FAC	2
Panicum clandestinum	deer tongue grass	herb	FACW	4
Parthenocissus quinquefolia	Virginia creeper	herb	FAC-	2
**Phytolacca americana*	pokeweed	herb	FAC-	1
Platanus occidentalis	sycamore	shrub	FACW	3
Prunus serotina	black cherry	shrub	FACU	1
Pycnanthemum tenuifolium	mountain mint	herb	FAC	4
Quercus imbricaria	shingle oak	herb	FAC-	2
Quercus palustris	pin oak	herb	FACW	4
Rhus coppalina	winged sumac	herb	UPL	2
**Rosa multiflora*	multiflora rose	shrub	FACU	
Rosa setigera	Illinois rose	shrub	FACU+	5
Rubus occidentalis	black raspberry	shrub	UPL	2
Rubus pensylvanicus	common blackberry	shrub	FAC-	2
Scirpus atrovirens	dark green bulrush	herb	OBL	4
**Solanum carolinense*	horse nettle	herb	FACU-	0
**Solidago canadensis*	Canada goldenrod	herb	FACU	1
Solidago ulmifolia	elm leaf goldenrod	herb	UPL	5
**Symphoricarpos orbiculatus*	coralberry	herb	FACU	1
**Toxicodendron radicans*	poison ivy	herb	FAC+	1
Ulmus americana	American elm	sapling, shrub, seedl	FACW-	5
Vernonia missurica	Missouri ironweed	herb	FAC+	5
Vitis cinerea	winter grape	woody vine/herb	FACW-	4
Vitis riparia	riverbank grape	woody vine/herb	FACW-	2

***Floristic Quality Index, as developed by J. Taft, D. Ladd, G. Wilhelm and L. Masters (1997)

*=non-native or weedy (24.6%), **=annual, but desirable
FQI=R/√N=135/√51= 18.9, mean C=R/N=135/51= 2.6

ROUTINE ON-SITE WETLAND DETERMINATION

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Wet Shrubland
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4

Location: eastern portion of the site

Do normal environmental conditions exist at this site? Yes: X No:
Has the vegetation, soil, or hydrology been significantly disturbed? Yes: No: X

VEGETATION

Dominant Plant Species	Stratum	Indicator Status
1. *Acer rubrum*	sapling	FAC
2. *Fraxinus pennsylvanica*	sapling	FACW

Percent of dominant species that are OBL, FACW, FAC+, or FAC: 100%
Hydrophytic vegetation: Yes: X No:
Rationale: Greater than 50% of the dominant species are OBL, FACW, FAC+, or FAC.

SOILS

Series and phase: Bonnie silt loam
On Saline County hydric soils list? Yes: X No:
Is the soil a histosol? Yes: No: X Histic epipedon present? Yes: No: X
Redox concentrations: Yes: X No: Redox depletions: Yes: X No:
Matrix color: 2.5Y 6/2 and 7/1
Other indicators: This soil is found in a level to depressional area on a floodplain.

Hydric soils: Yes: X No:
Rationale: Bonnie silt loam is a poorly drained soil that meets the requirements of the Natural Resource Conservation Service hydric soil indicator F3, depleted matrix.

ROUTINE ON-SITE WETLAND DETERMINATION

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Wet Shrubland
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4

Location: eastern portion of the site

HYDROLOGY

Inundated? Yes: No: X Depth of standing water: NA
Depth to saturated soil: 0.5 m (20 in)
Overview of hydrological flow through the system: Primary hydrologic inputs to this site are precipitation and runoff from the surrounding uplands. Evapotranspiration and sheetflow are the major outputs.
Size of watershed: 2.59 km^2 (1 mi^2)
Other field evidence observed: The site is low-lying and level. Wetland drainage patterns and water stained leaves were observed.

Wetland hydrology: Yes: X No:
Rationale: Field evidence suggests that this site is saturated or inundated for a sufficient duration during the growing season to meet the wetland hydrology criterion.

WETLAND DETERMINATION AND RATIONALE:

Is the site a wetland?: Yes: X No:
Rationale: Hydrophytic vegetation, hydric soils and wetland hydrology are all present. Therefore the site is a wetland. The site is not coded by the NWI.

Determined by: Allen Plocher (vegetation and hydrology)
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ROUTINE ON-SITE WETLAND DETERMINATION

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Wet Shrubland
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4
Location: eastern portion of site

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	FQI***
**Acalypha rhomboidea*	three seeded Mercury	herb	FACU	0
Acer rubrum	red maple	sapling/shrub	FAC	5
Asplenium platyneuron	ebony spleenwort	herb	FACU	4
Betula nigra	river birch	sapling/shrub	FACW	4
***Bidens frondosa*	beggar's ticks	herb	FACW	1
Boehmeria cylindrica	false nettle	herb	OBL	3
Campsis radicans	trumpet creeper	herb/woody vine	FAC	2
Carex normalis	sedge	herb	FACW	4
Carex squarrosa	sedge	herb	OBL	5
Carex vulpinoidea	fox sedge	herb	OBL	3
Celtis occidentalis	hackberry	sapling/shrub	FAC-	3
Cinna arundinacea	stout woodreed	herb	FACW	5
Diospyros virginiana	persimmon	sapling/shrub	FAC	2
Elymus virginicus	Virginia wild rye	herb	FACW-	4
***Erechtites hieracifolia*	fireweed	herb	FACU	2
Eupatorium perfoliatum	boneset	herb	FACW+	4
**Festuca pratensis*	English blue grass	herb	FACU-	
Fraxinus pennsylvanica	green ash	sapling/shrub	FACW	2
Geum canadense	white avens	herb	FAC	2
Gleditsia triacanthos	honeylocust	shrub/seedl	FAC	2
Glyceria striata	fowl manna grass	herb	OBL	4
Ilex decidua	swamp holly	shrub	FACW	6

***Floristic Quality Index, as developed by J. Taft, D. Ladd, G. Wilhelm and L. Masters (1997)

(Continued on following page)

ROUTINE ON-SITE WETLAND DETERMINATION

Site 4 (page 4 of 4)

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Wet Shrubland
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4
Location: eastern portion of site

SPECIES LIST (Continued)

Scientific name	Common name	Stratum	Wetland indicator status	FQI***
Impatiens capensis	jewel weed	herb	FACW	2
Lactuca floridana	blue lettuce	herb	FAC-	4
Leersia virginica	white grass	herb	FACW	4
**Lonicera japonica*	Japanese honeysuckle	herb/woody vine	FACU	
Lycopus virginicus	bugle weed	herb	OBL	5
**Lysimachia nummularia*	moneywort	herb	FACW+	
**Microstegium vimineum*	eulalia	herb	FAC	
Onoclea sensibilis	sensitive fern	herb	FACW	5
Panicum clandestinum	deer tongue grass	herb	FACW	4
Parthenocissus quinquefolia	Virginia creeper	herb/woody vine	FAC-	2
Polygonum punctatum	dotted smartweed	herb	OBL	4
Pycnanthemum tenuifolium	mountain mint	herb	FAC	4
Quercus palustris	pin oak	sapling/shrub	FACW	4
**Rosa multiflora*	multiflora rose	shrub	FACU	
Rubus occidentalis	black raspberry	shrub	UPL	2
Scirpus atrovirens	dark green bulrush	herb	OBL	4
Scutellaria lateriflora	mad dog skullcap	herb	OBL	4
**Solidago canadensis*	Canada goldenrod	herb	FACU	1
**Symphoricarpos orbiculatus*	coralberry	shrub	FACU	1
**Toxicodendron radicans*	poison ivy	herb/woody vine	FAC+	1
Ulmus americana	American elm	sapling/shrub/seedl	FACW-	5
Vernonia missurica	Missouri ironweed	herb	FAC+	5
**Viola pratincola*	common blue violet	herb	FAC	1
Vitis riparia	riverbank grape	herb/woody vine	FACW-	2

***Floristic Quality Index, as developed by J. Taft, D. Ladd, G. Wilhelm and L. Masters (1997)

*=non-native or weedy (21.7%), **=annual, but desirable
FQI=R/$\sqrt{N}$= 131/$\sqrt{41}$= 20.5, mean C=R/N= 131/41= 3.2

ROUTINE ON-SITE WETLAND DETERMINATION

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Wet Meadow/Ditch Bank
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4

Location: eastern edge of the site

Do normal environmental conditions exist at this site? Yes: X No:
Has the vegetation, soil, or hydrology been significantly disturbed? Yes: No: X

VEGETATION

Dominant Plant Species	Stratum	Indicator Status
1. *Phyla lanceolata*	herb	OBL
2. *Ludwigia palustris*	herb	OBL
3. *Leersia lenticularis*	herb	OBL

Percent of dominant species that are OBL, FACW, FAC+, or FAC: 100%
Hydrophytic vegetation: Yes: X No:
Rationale: Greater than 50% of the dominant species are OBL, FACW, FAC+, or FAC.

SOILS

Series and phase: Bonnie silt loam
On Saline County hydric soils list? Yes: X No:
Is the soil a histosol? Yes: No: X Histic epipedon present? Yes: No: X
Redox concentrations: Yes: X No: Redox depletions: Yes: X No:
Matrix color: 2.5Y 6/2 and 7/1
Other indicators: This soil is found in a level to depressional area on a floodplain.

Hydric soils: Yes: X No:
Rationale: Bonnie silt loam is a poorly drained soil that meets the requirements of the Natural Resource Conservation Service hydric soil indicator F3, depleted matrix.

ROUTINE ON-SITE WETLAND DETERMINATION

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Wet Meadow/Ditch Bank
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4

Location: eastern edge of the site

HYDROLOGY

Inundated? Yes: No: X Depth of standing water: NA
Depth to saturated soil: at surface
Overview of hydrological flow through the system: Primary hydrologic inputs to this site are precipitation and runoff from the surrounding uplands and ditch overflow. Evapotranspiration and sheetflow are the major outputs.
Size of watershed: 2.59 km^2 (1 mi^2)
Other field evidence observed: The site is level to depressional. Wetland drainage patterns and water stained leaves were observed.

Wetland hydrology: Yes: X No:
Rationale: Field evidence suggests that this site is saturated or inundated for a sufficient duration during the growing season to meet the wetland hydrology criterion.

WETLAND DETERMINATION AND RATIONALE:

Is the site a wetland?: Yes: X No:
Rationale: Hydrophytic vegetation, hydric soils and wetland hydrology are all present. Therefore the site is a wetland. The site is not coded by the NWI.

Determined by: Allen Plocher (vegetation and hydrology)
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ROUTINE ON-SITE WETLAND DETERMINATION

Site 5 (page 3 of 4)

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Wet Meadow/Ditch Bank
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4
Location: eastern edge of site

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	FQI***
Acalypha rhomboidea	three seeded Mercury	herb	FACU	0
Acer rubrum	red maple	seedl	FAC	5
Agalinus tenuifolia	slender false foxglove	herb	FACW	5
Agrimonia parviflora	swamp agrimony	herb	FAC+	5
****Ammannia coccinea*	ammannia	herb	OBL	5
Andropogon gerardii	big bluestem	herb	(planted)	5
Asclepias incarnata	swamp milkweed	herb	OBL	4
Aster vimineus	frost flower	herb	FACW-	3
Betula nigra	river birch	shrub/seedl	FACW	4
****Bidens aristosa*	beggar's ticks	herb	FACW	1
****Bidens frondosa*	beggar's ticks	herb	FACW	1
Boehmeria cylindrica	false nettle	herb	OBL	3
Boltonia diffusa	false aster	herb	FACW	4
Carex lupulina	hop sedge	herb	OBL	5
Carex normalis	sedge	herb	FACW	4
Carex squarrosa	sedge	herb	OBL	5
Carex vulpinoidea	fox sedge	herb	OBL	3
Carex sp	sedge	herb	-----	--
Cassia fasciculata	partridge pea	herb	FACU-	1
Cephalanthus occidentalis	button bush	shrub/seedl	OBL	4
Cyperus strigosus	yellow flat sedge	herb	FACW	0
Cyperus pseudovegatus	flat sedge	herb	FACW	5
Desmodium paniculatum	panicled tick trefoil	herb	FACU	2
Diospyros virginiana	persimmon	seedl	FAC	2
Echinochloa muricata	barnyard grass	herb	OBL	0
Elymus canadensis	Canada wild rye	herb	FAC-	4
Eryngium prostratum	eryngo	herb	OBL	5
Eupatorium coelestinum	mist flower	herb	FAC+	3
Eupatorium perfoliatum	boneset	herb	FACW+	4
Euthamia graminifolia	grass leaf goldenrod	herb	FACW-	3
Fraxinus pennsylvanica	green ash	shrub/seedl	FACW	2
Helenium autumnale	sneezeweed	herb	FACW+	3
Impatiens capensis	jewelweed	herb	FACW	2
Juncus effusus	common rush	herb	OBL	4
Juncus interior	inland rush	herb	FAC+	3
Leersia lenticularis	catchfly grass	herb	OBL	5
Leersia oryzoides	rice cutgrass	herb	OBL	3
Lobelia cardinalis	cardinal flower	herb	OBL	6

***Floristic Quality Index, as developed by Taft, Ladd, Wilhelm and Masters (1997)

*=non-native or weedy , **=annual, but desirable

Continued on following page

ROUTINE ON-SITE WETLAND DETERMINATION

Site 5 (page 4 of 4)

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Wet Meadow/Ditch Bank
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4
Location: eastern edge of site

SPECIES LIST (Continued)

Scientific name	Common name	Stratum	Wetland indicator status	FQI***
Lobelia siphilitica	blue lobelia	herb	FACW+	4
**Lonicera japonica*	Japanese honeysuckle	herb	FACU	
Ludwigia alternifolia	seedbox	herb	OBL	5
Ludwigia palustris	marsh seedbox	herb	OBL	4
Lycopus americanus	water horehound	herb	OBL	3
Lycopus virginicus	bugleweed	herb	OBL	5
**Lysimachia nummularia*	moneywort	herb	FACW+	
Mimulus alatus	monkey flower	herb	OBL	6
Panicum anceps	panic grass	herb	FACW	3
Panicum rigidulum	Munro grass	herb	FACW	6
Paspalum laeve	smooth beadgrass	herb	FACW-	2
Penstemon digitalis	beard tongue	herb	FAC-	4
Penthorum sedoides	ditch stonecrop	herb	OBL	2
**Phalaris arundinacea*	reed canary grass	herb	FACW+	
Phragmites communis	common reed	herb	FACW+	1
Phyla lanceolata	fog fruit	herb	OBL	1
Phytolacca americana	pokeweed	herb	FAC-	1
Pluchea camphorata	camphorweed	herb	FACW	8
Polygonum punctatum	dotted smartweed	herb	OBL	3
Populus deltoides	cottonwood	shrub/seedl	FAC+	2
**Potentilla recta*	sulfur cinquefoil	herb	UPL	
Prunella vulgaris elongata	self heal	herb	FAC	1
Pycnanthemum tenuifolia	slender mountain mint	herb	FAC	4
Quercus palustris	pin oak	seedl	FACW	4
**Rosa multiflora*	multiflora rose	shrub	FACU	
Sagittaria latifolia	arrowhead	herb	OBL	4
Salix nigra	black willow	shrub/seedl	OBL	3
Scirpus atrovirens	dark green bulrush	herb	OBL	4
Scirpus cyperinus	wool grass	herb	OBL	5
Sium suave	water parsnip	herb	OBL	5
Solidago canadensis	Canada goldenrod	herb	FACU	1
Sorghastrum nutans	Indian grass	herb	(planted)	4
Stachys palustris	marsh hedge nettle	herb	OBL	5
Toxicodendron radicans	poison ivy	herb	FAC+	1
Ulmus americana	American elm	seedl	FACW-	5
Vernonia missurica	Missouri ironweed	herb	FAC+	5
Vitis aestivalis	summer grape	herb	FACU	4

***Floristic Quality Index, as developed by J. Taft, D. Ladd, G. Wilhelm and L. Masters (1997)

*=non-native or weedy (18.9%), **=annual, but desirable
FQI=R/√N= 229/√67= 28.0, mean C=R/N=229/67= 3.4

ROUTINE ON-SITE WETLAND DETERMINATION

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Floodplain Forest
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4

Location: various locations in the southern part of the site

Do normal environmental conditions exist at this site? Yes: X No:
Has the vegetation, soil, or hydrology been significantly disturbed? Yes: No: X

VEGETATION

Dominant Plant Species	Stratum	Indicator Status
1. *Quercus palustris*	tree	FACW
2. *Fraxinus pennsylvanica*	tree	FACW
3. *Betula nigra*	tree	FACW
4. *Fraxinus pennsylvanica*	sapling	FACW
5. *Elymus virginicus*	herb	FACW-
6. *Festuca pratensis*	herb	FACU-
7. *Impatiens capensis*	herb	FACW

Percent of dominant species that are OBL, FACW, FAC+, or FAC: 85.7%

Hydrophytic vegetation: Yes: X No:
Rationale: More than 50% of dominants are OBL, FACW, FAC+, or FAC.

SOILS

Series and phase: Bonnie silt loam
On Saline County hydric soils list? Yes: X No:
Is the soil a histosol? Yes: No: X Histic epipedon present? Yes: No: X
Redox concentrations: Yes: X No: Redox depletions: Yes: X No:
Matrix color: 10YR 6/2
Other indicators: This soil is found in a level to depressional area on a floodplain.

Hydric soils: Yes: X No:
Rationale: Bonnie silt loam is a poorly drained soil that meets the requirements of the Natural Resource Conservation Service hydric soil indicator F3, depleted matrix.

ROUTINE ON-SITE WETLAND DETERMINATION

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Floodplain Forest
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4

Location: various locations in the southern part of the site

HYDROLOGY

Inundated? Yes: No: X Depth of standing water: NA
Depth to saturated soil: greater than 1.2 m (48 in)
Overview of hydrological flow through the system: Primary hydrologic inputs to this site are precipitation, runoff from the surrounding uplands and ditch overflow. Evapotranspiration and sheetflow are the major outputs.
Size of watershed: 2.59 km^2 (1 mi^2)
Other field evidence observed: low landscape position, wetland drainage patterns, water stained leaves

Wetland hydrology: Yes: X No:
Rationale: Evidence cited above indicates that this site is flooded or saturated for a sufficient period during the growing season to meet the criterion of wetland hydrology.

WETLAND DETERMINATION AND RATIONALE:

Is the site a wetland?: Yes: X No:
Rationale: Hydrophytic vegetation, hydric soils and wetland hydrology are all present. Therefore the site is a wetland. The site is not coded by the NWI.

Determined by: Allen Plocher (vegetation and hydrology)
Rick Larimore (vegetation and hydrology)
Dennis Keene (soils and hydrology)
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Center for Wildlife Ecology
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Champaign, Illinois 61820
(217) 333-6292

ROUTINE ON-SITE WETLAND DETERMINATION

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Floodplain Forest
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4

Location: various locations in the southern portion of the site

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	FQI*
**Acalypha rhomboidea*	three seeded Mercury	herb	FACU	0
Acer negundo	box elder	tree/sapl	FACW-	1
Acer rubrum	red maple	tree/sapl/shrub/seedl	FAC	5
Aster ericoides	heath aster	herb	FACU-	4
Aster lateriflorus	side flowered aster	herb	FACW-	2
Betula nigra	river birch	tree/sapl/shrub	FACW	4
Boehmeria cylindrica	false nettle	herb	OBL	3
Campsis radicans	trumpet creeper	woody vine/herb	FAC	2
Carex blanda	woodland sedge	herb	FAC	2
Carex grayi	Gray's sedge	herb	FACW+	6
Carex muskingumensis	sedge	herb	OBL	6
Carex normalis	sedge	herb	FACW	4
Carex squarrosa	sedge	herb	OBL	5
Carex vulpinoidea	fox sedge	herb	OBL	3
Carya laciniosa	shellbark hickory	tree	FACW	7
Cephalanthus occidentalis	buttonbush	shrub/herb	OBL	4
Cicuta maculata	water hemlock	herb	OBL	4
Cinna arundinacea	stout wood reed	herb	FACW	5
Cornus obliqua	pale dogwood	shrub	FACW+	4
Cornus florida	flowering dogwood	shrub	FACU-	5
Desmodium paniculatum	panicled tick trefoil	herb	FACU	2
Diospyros virginiana	persimmon	tree/sapl	FAC	2
Elymus virginicus	Virginia wild rye	herb	FACW-	4
Eupatorium perfoliatum	boneset	herb	FACW+	4
Eupatorium rugosum	white snakeroot	herb	FACU	2
**Festuca pratensis*	English bluegrass	herb	FACU-	
Fraxinus pennsylvanica	green ash	tree/sapl/shrub	FACW	2
Geum canadense	white avens	herb	FAC	2
Gleditsia triacanthois	honey locust	tree/shrub	FAC	2

*Floristic Quality Index, as developed by J. Taft, D. Ladd, G. Wilhelm and L. Masters (1997)

(Species list continued on next page)

ROUTINE ON-SITE WETLAND DETERMINATION

Site 6 (page 4 of 4)

Field Investigators: Plocher, Larimore, Keene **Date:** 10 September 2003
Sect. No.: (7-3, 8-1-1) A, 8-1 B **Project Name:** FAP 331 (IL 13) Wetland Mitigation
State: Illinois **County:** Saline **Applicant:** IDOT District 9
Site Name: Floodplain Forest
Legal Description: T.9S., R.5 E., Sect. 18, NW/4 SE/4
Location: various locations in the southern portion of the site

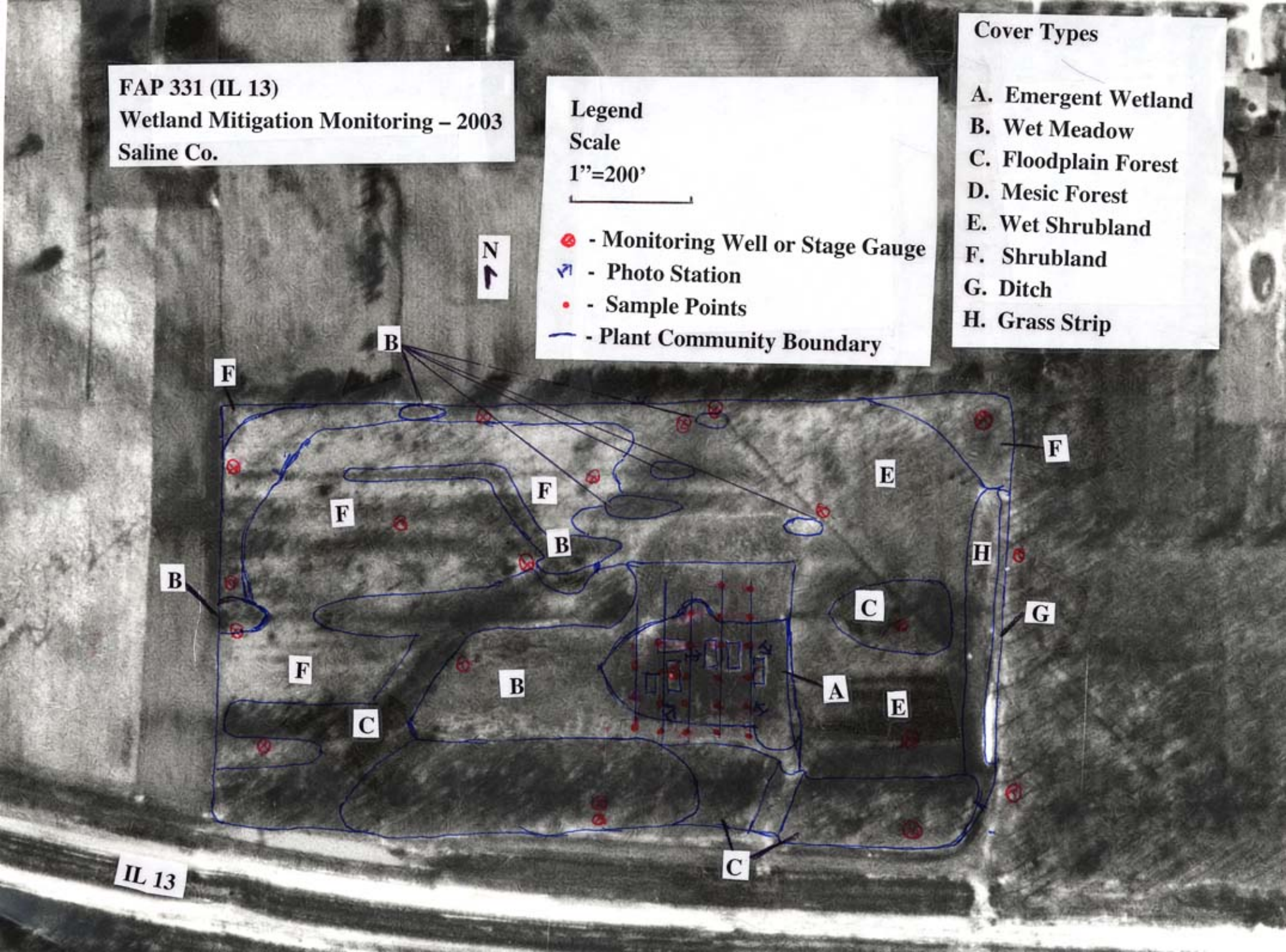
SPECIES LIST (Continued)

Scientific name	Common name	Stratum	Wetland indicator status	FQI*
Glyceria striata	fowl manna grass	herb	OBL	4
Impatienss capensis	jewel weed	herb	FACW	2
**Lonicera japonica*	Japanese honeysuckle	woody vine/herb	FACU	
Lycopus virginicus	bugleweed	herb	OBL	5
**Lysimachia nummularia*	moneywort	herb	FACW+	
Mimulus ringens	monkey flower	herb	OBL	5
Parthenocissus quinquefolia	Virginia creeper	woody vine,/herb	FAC-	2
Phyla lanceolata	fog fruit	herb	OBL	1
**Phytolacca amrericana*	pokeweed	herb	FAC-	1
Platanus occidentalis	sycamore	tree	FACW	3
Polygonum punctatum	dotted smartweed	herb	OBL	4
Polygonum setaceum	bristly smartweed	herb	OBL	7
Populus deltoides	cottonwood	tree/sapl	FAC+	2
Prunus serotina	black cherry	sapling	FACU	1
Quercus bicolor	swamp white oak	tree/sapl/seedl	FACW+	7
Quercus palustris	pin oak	tree/sapl/ shrub	FACW	4
**Rosa multiflora*	multiflora rose	shrub	FACU	
Rubus occidentalis	black raspberry	shrub/herb	UPL	2
Rubus pensylvanicus	common blackberry	shrub	FAC-	2
Sambucus canadensis	elderberry	shrub/herb	FACW-	2
Scirpus atrovirens	dark green bulrush	herb	OBL	4
Scutellaria lateriflora	mad dog skullcap	herb	OBL	4
**Solidago canadensis*	Canada goldenrod	herb	FACU	1
**Symphoricarpos orbiculatus*	coralberry	shrub/herb	FACU	1
**Toxicodendron radicans*	poison ivy	woody vine/herb	FAC+	1
Ulmus americana	American elm	tree/sapl/shrub/seedl	FACW-	5
Vernonia missurica	Missouri ironweed	herb	FAC+	5
**Viola pratincola*	common blue violet	herb	FAC	1
Vitis cinerea	winter grape	woody vine/herb	FACW-	4
Vitis riparia	riverbank grape	woody vine/herb	FACW-	2

*Floristic Quality Index, as developed by J. Taft, D. Ladd, G. Wilhelm and L. Masters (1997)

*=non-native or weedy (16.9%)

FQI=R/√N=178/√55=24.0, mean C=R/N=178/55=3.2


FAP 331 (IL 13)
Wetland Mitigation Monitoring – 2003
Saline Co.
Legend
Scale
1"=200'
- Monitoring Well or Stage Gauge
- Photo Station
- Sample Points
- Plant Community Boundary
N
Cover Types
A. Emergent Wetland
B. Wet Meadow
C. Floodplain Forest
D. Mesic Forest
E. Wet Shrubland
F. Shrubland
G. Ditch
H. Grass Strip
IL 13